



MARCH

1957

THE MANAGEMENT REVIEW

THE MONTH'S BEST IN BUSINESS READING...

TESTS / FEATURE ARTICLES / BOOK REVIEWS

Special Features:

*Creativity in Industry: The Care and
Feeding of New Ideas*

Ten Ways to Petrify Progress

Educating Tomorrow's Executives

Industrial Libraries Come of Age

AMERICAN MANAGEMENT ASSOCIATION

**The first two publications in the new AMA
Research and Development Series:**

ORGANIZING THE RESEARCH FUNCTION FOR PROFIT

This new AMA publication features a detailed and useful study by executives of *International Business Machines Corporation* of that company's Product Planning and Market Analysis Division. This division, responsible for the improvement of existing products and the development of desirable new products, helps to assure IBM's future progress. In addition to describing the division's organization, the report explains the coordination of product planning with all other functions of the corporation.

Other papers discuss how the research and development function is organized at *General Electric Company* and *American Cyanamid Company*.

Research and Development Series 1

\$1.75 (AMA members: \$1.00)

STRENGTHENING THE RESEARCH EFFORT:

Personnel—Tools—Potentials

The critical shortage of scientists and engineers demands that available research personnel be utilized at maximum effectiveness. How this can be done is described by representatives of *Bell Telephone Laboratories* in this new publication. They discuss the *Bell Telephone* educational program for developing and increasing the effectiveness of the technical staff and describe methods of conserving professional talent for important research efforts.

Other papers describe how to strengthen the motivation of industrial research personnel (*National Cash Register Company*), and how the technical director can successfully participate in the top management of his company (*Argus Cameras, Inc.*).

Research and Development Series 2

\$1.75 (AMA members: \$1.00)

NOTE: Special binders for the new Research and Development Series publications are available. These binders are uniform with other AMA publication binders and provide a convenient method of filing for permanent reference.

\$2.50 each.

Order from DEPARTMENT MF, AMERICAN MANAGEMENT ASSOCIATION, INC., 1515 Broadway, Times Square, New York 36, N. Y.

AMA will pay normal postage and handling charges on all orders accompanied by check or money order. Orders under \$5.00 should be accompanied by remittance. Orders of \$5.00 or more, unless accompanied by remittance, will be billed for postage and handling charges. Add 3% sales tax for orders to be delivered in New York City.

**The AMA Program:
No. 5 of a Series**

Knowledge in Depth

TWO DISTINCTIVE QUALITIES identify the successful executive—*desire* to add new information to his stock of managerial knowledge and *ability* to communicate his knowledge and experience to others.

The AMA program features activities and informational services designed to help the individual executive perform his job more efficiently:

1. Communication Skill Clinics

Intensive, three-day sessions—held by the Executive Action Course staff—offer the individual executive a unique opportunity to measure his communication performance and to practice the vital communication techniques essential to successful management. Top authorities demonstrate the basic, as well as the newest and most advanced, communication techniques. Registrants then spend the major portion of Clinic time applying these techniques to problems of their own choosing. These Communication Skill Clinics develop and sharpen the most important management skills.

2. Research Reports

As part of its program of service to management, AMA conducts research projects in specific management areas. The printed results of these projects—incorporating problems and solutions—provide the executive with authoritative reports on new developments in his specialized field.

3. Management Information Service

A clearing house for information about practices in every branch of management, the Management Information Service includes a reference library and features a unique collection of company material made available by AMA members. The trained staff is prepared to assist AMA members with their individual management problems by suggesting new sources of reference and information.

THE MANAGEMENT REVIEW

VOLUME XLVI, NO. 3

Contents ■ March, 1957

FEATURES

page

- 56 Creativity in Industry: The Care and Feeding of New Ideas
by Lydia Strong
- 73 Ten Ways to Petrify Progress
- 77 Educating Tomorrow's Executives: The Case for the Liberal Arts
by Gilbert W. Chapman
- 84 Industrial Libraries Come of Age
by Samuel Sass

BUSINESS DIGESTS OF THE MONTH

Trends and Perspectives

- 4 Tight Money: A Brake on the Boom? (*Michigan Business Review*)
- 10 Office Fringe Benefits: They're Still Growing (*National Office Management Association*)
- 18 Are We Growing Too Fast? (*David Rockefeller*)
- 23 College Research Does a Job for Industry (*The New York Times*)
- 28 Twenty Years from Now: A Forecast (*David Sarnoff*)
- 38 Coming: More Government Regulation (*Challenge*)

Management Policy and Practice

- 6 Making Executives Better Readers (*The Wall Street Journal*)
- 13 Briefcase Blues: The Problem of Executive Homework (*Today's Living*)
- 33 Recent Progress in Health Insurance (*The Weekly Underwriter*)
- 43 Is Your Communications Program Geared to Tomorrow? (*The Communicator*)
- 47 The Suggestion Box: Treasure Chest for Industry (*Newsweek*)

Operating Guides for Executives

- 9 Can Direct Selling Boost Your Profits? (*Sales Management*)
- 27 Air Freight: A Cure for Shipping Headaches? (*The Iron Age*)
- 32 Shortcuts to Executive Failure (*Personnel Information Bulletin*)
- 36 Controlling Quality in Purchasing (*Henry J. Jacobson*)
- 46 The Fine Art of Unpublic Relations (*Manager's Magazine*)

What Others Are Doing

- 14 How Industry Is Using Color (*Commerce*)
- 20 Leveling Peak Office Workloads: One Company's Approach (*Modern Office Procedures*)
- 24 Executive Expense Accounts: A Survey of Company Practices (*American Business*)
- 41 Cutting Labor Costs with Temporary Help (*Nation's Business*)

DEPARTMENTS

50 Also Recommended

Brief summaries of other timely articles

91 Survey of Books for Executives

Cover photograph: H. Armstrong Roberts

HARWOOD F. MERRILL, *Editor-in-Chief*

ROLAND MANN, *Managing Editor*

ROBERT F. GUDER, *Associate Editor*

PETER REID, *Assistant Editor*

VIVIENNE MARQUIS, *Consulting Editor*

LYDIA STRONG, *Contributing Editor*

JULIET M. HALFORD, *Book Review Editor*

THE MANAGEMENT REVIEW is published monthly by the American Management Association, Inc., at 1515 Broadway, Times Square, New York 36, N. Y. Entered as second-class matter March 26, 1925, at the Post Office at New York, N. Y., under the act of March 3, 1879. Subscriptions: \$7.50 per year (non-members, \$12.50). Single copies: \$1.00 (non-members, \$1.25). Volume XLVI, No. 3, March, 1957.

Changes of address should be forwarded to the publishers *one month in advance*, and postal zone numbers should be included in all addresses.

The object of the publications of the American Management Association, Inc., is to place before the reader ideas which it is hoped may prove interesting and informative, but the Association does not stand sponsor for views expressed by authors in articles issued in or as its publications.

An index to THE MANAGEMENT REVIEW is published annually with the December issue. The contents are also indexed in the Industrial Arts Index. THE MANAGEMENT REVIEW is microfilmed by University Microfilms, Ann Arbor, Mich.

Copyright 1957, American Management Association, Inc.

Tight Money: A Brake on the Boom?

MONEY IS TIGHT and getting tighter. This is a new and strange phenomenon for most bankers and business men. In the period since the thirties there has been, literally, an explosion in the demand for money and capital. But, although by far the greater part of the great increases in demand came before 1955, the money stringency didn't start until that year.

The reason is that an increase in the turnover of the money supply, an increase in the currency outside banks from \$6.4 billion to \$27.9 billion, and an increase in demand deposits (the modern money supply) from \$29.7 billion to \$106.6 billion took care of the great increase in demand until the end of 1954; but since then, not only has there been no expansion of the money supply—it has actually decreased.

Since the end of World War II, there has been an almost continuous excess of investment demand over the supply of cash savings. As a people, we wanted new automobiles *and* new houses; we wanted shiny new, all-steel kitchens *and* new hospitals; we wanted new schools *and* new roads; we also wanted a higher standard of living and, thus, could not save enough to pay for these things.

As bank loans had fallen to very low levels in the Great Depression of the 1930's, there was room for sufficient expansion to cover the ex-

cess of demand over supply until 1955. But the limits of bank credit expansion under present conditions are now being sorely pushed. Even though bank credit has been enormously expanded, higher prices, higher wage levels, heavy expenditures for public works, heavy real estate financing, record-breaking capital expansion, tax-payment acceleration, inventory accumulation, and the general high level of business activity have caused demand to outrun supply. Putting it bluntly, there is no "shortage" of credit—no one has "taken it away"—but there is a seemingly insatiable demand for it. In short, it is soaring demand which has upset the appiecart.

Some of the more important effects of the tight money pressure under the prevailing conditions of credit restraint warrant close analysis. Between January 1, 1955, and August 29, 1956, the commercial banks were forced to sell \$12 billion of government obligations in order to increase their loans by \$17 billion. Because of the substantial loss involved in the sale of the longer-term issues, the banks sold Treasury bills and certificates, thus sharply decreasing their liquidity. This decline in liquidity and the sharp increase in the ratio of risk assets to deposits have forced all banks to adopt a more cautious loan policy.

For publishers' addresses or information regarding articles or books, apply to AMA headquarters.

The higher rates on corporate bonds have caused corporations to reduce or postpone bond issues, and thus will have an adverse effect on capital expenditures. This effect was not marked so long as the corporations could obtain credit from the banks; but now that availability of credit, as well as its cost, is a problem, the pressure on capital expenditures will increase. Similarly, tight money has caused municipalities and public agencies to postpone or reduce their public works programs.

It is much more difficult to obtain construction loans and mortgage money than it was a year ago. This problem of financing is bound to have an adverse effect on the sale and value of both old and new houses. It has already had a serious effect on the number of home starts, which have dropped more than 20 per cent.

Tight money inevitably hits the smaller and marginal concerns harder than the larger ones. Although such concerns have increased costs, they find it very difficult to increase their borrowing at the banks. As might be expected, the failure rate of such concerns is rising.

What can be done about the tight money situation? Monetary authorities could reduce reserve requirements, which are very high historically, or they could supply reserves on a consequential basis through open market operations. But neither is likely, with prices rising and the threat of inflation increasing.

The government could use the 1956 calendar year surplus of some \$6 billion and the prospective 1957 calendar year surplus of a like amount to retire non-bank-held debt. If this

is done instead of increasing expenditures, it should have a very favorable effect on the money market.

Corporations and public agencies could trim their capital expenditures to fit our ability to finance them on a noninflationary basis. The one thing that we cannot afford is the inflation that is inevitable if we insist on living beyond our means.

Labor can help by increasing productivity and refraining from giving further impetus to the wage-price spiral.

It now seems clear that the pressure of tight money will bring the boom to an end sooner than was expected. Already a considerable volume of new construction has been abandoned in the planning stage because construction loans could not be obtained. It follows that housing starts are bound to decline further, and that the volume of public works, particularly school construction, will be reduced. Also, tight money, sooner or later, is bound to have an adverse effect on the stock market and on capital expenditures. These developments will certainly cause a reappraisal of public, corporate, and private spending.

Once the boom trend in business activity and the upward trend in prices come to an end, money will be easy again. To the ease flowing from these changes in basic factors will be added the further ease of a relaxation in Federal Reserve policy. The key, then, to the future of interest rates is the rate of business activity and the behavior of prices.

■ *Raymond Rodgers.*

MICHIGAN BUSINESS REVIEW,
January, 1957, p. 1:4.

Making Executives Better Readers

AMERICAN INDUSTRY in many places is taking over the job of teaching grown-up Johnny what he should have learned in school—the art of efficient reading.

Most business men, like most U.S. adults, have never been exposed to advanced reading training. What training they had ended at the elementary school level. As a result, they creep across a page of type at an average of about 250 words a minute—a seventh-grader's pace.

According to reading experts at Purdue University, an executive these days is "handicapped" unless he can read and assimilate newspaper-type material at 550 words a minute. On desk correspondence, a capable business reader ought to move only a little slower, perhaps 400 words a minute, and still glean all the information he needs.

Up to six or seven years ago, few business men even had heard of the reading techniques developed by educators during the 1930's and sharpened up by the Armed Services during World War II. Since 1949 or 1950, however, industry has done a lot with better reading. In the process, reading techniques themselves have been improved and business men have learned much about what can, and cannot, be done with speed reading courses.

Thousands of executives have increased their reading skill, and reading instruction is on the way to becoming a fully-accepted training tool for business men. In most companies, however, speed reading has

so far been considered useful only for executives at the middle and upper levels of management—people whose desks are increasingly laden with printed matter. Very little has been done for workers farther down the line, and nothing at all for "production" people.

This position, however, is now being re-examined. Several companies are beginning to ask questions like these: Why wouldn't typists do faster, neater, more accurate work if they were exposed to a course in efficient reading? Why wouldn't key punch operators, billing clerks, and other manipulators of office machinery put out more work if their reading techniques were made as good as their manual ones?

Among the companies experimenting along this line is John Hancock Mutual Life Insurance Co., of Boston, which recently gave a reading course to a couple of groups of typists and key punch operators.

In most major cities, reading courses are available—and crowded—at local universities and special reading schools. Some business men would like to start a course in their companies but find it hard to cut through the conflicting claims of reading supplies salesmen. "There's a lot of quackery in this field," maintains the labor relations director of a Massachusetts manufacturing company. After considerable study, he has tentatively come to the conclusion that group teaching of reading skills won't work. "The secret," he claims,

"is to get the individual interested in improvement, then let him teach himself."

There's a lively market for books on how to improve reading. Dozens of titles are available, and in 1956 alone at least four new ones were added to the list. Many business courses make use of such books.

Among the mechanical devices used in reading training is the accelerator, or pacer, which forces the reader's eye to race down a page ahead of an advancing shutter, shadow, or line. Other mechanical aids are the reading film, which conducts the eye through the text in the rhythmic movements of good reading, and the tachistoscope, which attempts to increase the amount of information a reader can take in with a single glance of 1/10 or even 1/50 of a second.

Many industrial training directors have come to the conclusion that, though reading equipment sales are rising, such devices are not essential to learning to read better and faster. Even a salesman for a successful device says, "I think I could teach anyone to read just as well without this thing—but I'd have to get his interest first, and that's where the machine is extremely valuable." However, it is a rare industrial reading course that doesn't use some mechanical contrivance or other.

Companies that have had the most success with reading courses demand extensive work by the student on vocabulary, paragraph structure, recognition of key words, and concentration.

Despite a tendency to boast about results, most company training directors have learned to be skeptical of spectacularly high rates of improvement. Rates of speed tend after a few months to drop from the peak reached at a course's end. But comprehension rates—i.e., effective speed—tend to creep slightly higher as time goes by.

Industrial reading trainers have found out that a most important skill in reading is the ability to "shift gears"—to race through newspapers and light fiction, but to slow down on more difficult material. Lawyers and engineers especially, they have discovered, tend to read everything at the same snail's pace at which they read legal briefs or abstruse scientific monographs. Such readers can be stirred out of their habits for purposes of light reading, but most teachers do not expect to speed up rates on reading where every word counts. "That isn't really reading at all," said one training man, "it's inspection."

■ David O. Ives.

THE WALL STREET JOURNAL,
January 9, 1957, p. 1:2.

IMA SPECIAL CONFERENCE

A Special International Management Association Conference on markets and profits abroad will be held Wednesday through Friday, May 22-24 inclusive, at the Roosevelt Hotel, New York.

Motives Behind the Mergers

WHEN COMPANIES MERGE, what are their motives? Mergers are big news these days; there have been 3,500 of them in the past five years.

Actually, a company may have any of several reasons for seeking to bring another firm into its own organization. Here are some of the major ones:

- ☛ To strengthen product lines.

- ☛ To effect operating savings. Example: a paper manufacturer reaches back to acquire a lumber mill, forward to acquire a paper products plant—or both.

- ☛ To join forces with another firm that deals in the same product.

- ☛ To improve competitive position, and obtain advantages of a larger sales network.

- ☛ To diversify. A railroad equipment manufacturer prone to business fluctuation might acquire an electronics and research company, or a firm manufacturing earth-moving equipment.

- ☛ To obtain high-grade management. Sometimes the primary reason for a merger is to get the services of the selling company's president and other key personnel.

- ☛ To get a listing on the New York Stock Exchange.

Who is doing the merging? According to the Federal Trade Commission, there has been more merging in the non-electrical machinery field than any other. Between 1949 and 1955, 166 companies in this field acquired other firms, while 249 were themselves acquired. Food and kindred products companies were the next most active mergers, with the chemicals field coming in third, followed by the fabricated metals industry. Companies producing stone, clay and glass products did the least merging of all.

—*Management Methods* 11/56

When Is a Foreman Not a Foreman?

THE AVERAGE FOREMAN spends almost 20 per cent of his time acting as a messenger, according to a survey made recently at the Chemical Division of Merck & Co. The survey showed that only about 25 to 30 per cent of the average foreman's time was spent in direct supervision, and that, aside from messenger duties, he spent 10 to 15 per cent in clerical work, and 10 per cent working with fellow supervisors.

Corrective measures taken at Merck after the survey increased the time available for direct supervision by 40 to 50 per cent. This was done by reassigning much of the routine work to clerical help, installing a loud-speaker system that cut communications time a third, and transferring certain 100 per cent inspection jobs from foremen to inspection groups.

—*American Machinist* 12/17/56

Can Direct Selling Boost Your Profits?

ANY COMPANY with a quality consumer product might well consider the advantages of direct-to-consumer distribution. The variety of items sold in this manner is constantly widening, and now includes such basic necessities as food, clothing, homes, cosmetics, automobiles, insurance—and even vitamins.

The original concept of direct selling has broadened to take in many other ways of reaching the consumer besides the traditional door-to-door method. A large part of direct selling today is done by appointment, leads, referrals, party plan, club plan, telephone solicitation, and calling on established customers.

One great advantage of direct selling is that the manufacturer or distributor can control prices and the kind and amount of sales effort devoted to his products in each community. Once the selling formula is established, he can build as big a business as he wishes by increasing the number of people selling his product.

In addition to providing control over where, when, and how much merchandise will be sold, direct selling also can be a more profitable way of doing business. All the salespeople and most of the managers will be on a commission basis. This can mean a lower overhead compared to other methods.

What should a company consider when exploring this method of distribution? Of first importance: Do you make a consumer product of good

quality, and is it a repeat item? The repeaters do best, because salespeople can build a steady income through serving regular customers. Is it a good profit item? Direct selling usually requires a greater spread between cost and retail price than some other methods of distribution. Is it something used by broad segments of the consuming public? Does it have exclusive features which can be demonstrated or capitalized on by salespeople? Is it priced competitively and within the reach of the majority of consumers?

If the answers to these questions are affirmative, a final consideration is: Will you need to change your present method of distribution, or sell the product under a different name? One or the other may be necessary, since it is difficult to sell a product by two different methods in the same market area. But the same item, with slight variations, can be sold direct under a different brand name without interfering with your present distribution.

Your first step is to determine your chances of success with a direct-selling program. This can be done accurately and inexpensively by setting up a sales-laboratory operation in one or two typical markets. In this way, you can test the direct-selling possibilities for your product or products and develop successful sales techniques at the same time.

From the sales-laboratory operation you can learn (1) whether your products are suitable for direct selling;

(2) which method is best; (3) what kind of sales presentation is necessary; (4) what type of salesperson will be most effective; (5) what rate of commission you should pay salespeople; (6) how much of an investment will be necessary; and (7) how soon the program can become profitable.

Here's how you can set up a sales laboratory operation:

1. Select a typical medium-size market area.

2. Determine the various economic levels of the market area, so that the tests will include proper sampling at all levels.

3. Appoint a crew supervisor who understands the importance of proper record-keeping and knows how to supervise salespeople.

4. Hire a test selling crew of about five persons of the type you would expect to have in your direct-selling program. They should be given a minimum amount of training in the selling methods you think will be best, and should be provided with

the sales equipment that is necessary.

5. Assign a trained observer to work with the salespeople and analyze their selling performance. The observer will help to develop a successful selling formula.

6. Maintain a daily study of the records and continue the field work until the sales results—for the crew as a whole—show a constant average rate for consumers on each economic level in the market area.

After completing the first test, the company will know its chances of success in direct selling, and can determine the next steps to be taken. If the results are favorable, it may want to run similar tests in two or three other market areas to be certain results will be the same elsewhere.

When these tests have been completed, final plans can be made for each phase of building the direct-selling business.

■ R. L. Longwell.

SALES MANAGEMENT, December 21, 1956, p. 274.

Office Fringe Benefits: They're Still Growing

MORE AND MORE companies are providing fringe benefits for their office workers. Taken as a group, insurance benefits lead the way in popularity, while the most firmly established individual benefit is still the paid vacation.

These are some of the facts that emerge from a major survey of office fringe benefits recently completed by the National Office Management As-

sociation. Survey respondents were 4,900 companies of diverse types and sizes from all sections of the U.S. and Canada.

Each of the various kinds of insurance benefits—group life, group hospital, medical and/or surgical, health and accident, and pension—are now provided by more than 60 per cent of the companies reporting, as against 50 per cent in 1948.

Heading the list of insurance benefits is group hospital coverage, found in 97 per cent of the companies surveyed. Medical and/or surgical insurance comes right behind, being provided by 94 per cent. In both of these types of insurance, coverage for dependents is almost as frequent as coverage for the employees themselves.

Health and accident insurance and pension plans trail behind other insurance benefits in popularity; only 60 per cent of the companies reported having health and accident insurance for their employees, while 66 per cent have pension plans.

As a group, monetary fringe benefits are least in favor, as they were in 1948. However, one monetary benefit, the granting of pay increases on merit or a combination of merit and seniority, is found in 95 per cent of the companies reporting. At the bottom of the list are the guaranteed annual wage (9 per cent, up from 7 per cent in 1948), and incentive wage plans (10 per cent, not included in 1948 survey). One monetary benefit—profit-sharing—is the only fringe benefit of any type to lose ground since 1948, dropping from 22 per cent to 19 per cent.

Among leave benefits, vacations are almost universal, being provided by 99 per cent of the reporting companies. Nearly as widespread is sick leave, which registered 95 per cent, a gain of 12 percentage points since 1948. Substantial gains also appeared in the categories of maternity leave (from 24 to 40 per cent), pay for involuntary severance (from 49 to 63 per cent), and pay for voluntary

severance (from 9 to 17 per cent). Marriage leave, a category not included in the 1948 survey, was reported by 32 per cent of the respondents, while leave for military duty increased from 55 to 63 per cent.

Fringe benefit policies vary greatly from industry to industry. Of the service industries reporting, for example, only 25 per cent have pension plans, as contrasted with 96 per cent of the public utilities surveyed. Wide variances are also found in the category of pay for involuntary severance, ranging from 35 per cent among educational institutions to 77 per cent among chemical manufacturing companies.

Company size is another source of variation in fringe benefit policies. Group life insurance, for instance, is provided by only 68 per cent of the companies having one to 10 office employees, while it is provided by 95 per cent of firms with 251 to 500 office workers. However, a slight percentage decrease occurs with companies employing over 1,000 office workers.

Methods of paying for insurance benefits have varied little since 1948. In the case of group life insurance, 37 per cent of the companies reported that they pay the whole bill, while 62 per cent said the cost is shared jointly by the company and the employees. The remaining 1 per cent use both methods, meaning that the company will pay for a certain amount of insurance but the employee has the privilege of taking more at his own expense. Companies paying for group hospitalization totaled 33 per cent, while 43 per cent call on

the employees for part of the payment and in the remaining 24 per cent the employees must bear the whole cost. In the case of pension plans, exactly half of the companies pay the entire cost. In 48 per cent the cost is borne jointly, in 1 per cent the employee pays for his own pension, and in the remaining 1 per cent a combination of methods is used.

A breakdown of company policies on vacation leave shows that in 57 per cent of the reporting companies a vacation must be taken during the year in which it is earned or not at all, while only 13 per cent allow the employee to accumulate vacation time if he desires. The remaining 30 per cent do not allow vacation accumulation but do pay for the time due if the employee foregoes his vacation.

One-week vacations are granted by 80 per cent of the reporting companies, including those which give longer vacations to employees with longer service. A vast majority (95 per cent) give two-week vacations, while 66 per cent give three-week vacations to some employees and 21 per cent grant either four weeks or one month.

Usually the length of vacation

varies with length of service. Of those companies granting one-week vacations, 77 per cent grant them when the employee has been on the payroll for less than a year, while the remainder grant them only after a full year of employment. For companies giving two-week vacations, the majority (66 per cent) set one full year of employment as the requirement. Two years is required by 15 per cent, while 9 per cent do not require a full year. The remaining 10 per cent give their two-week vacations after from three to 10 years.

Only 4 per cent of the companies give a vacation of three weeks in less than five years. Three-week leaves are granted by 42 per cent after from 16 to 26 years, while 36 per cent require from 11 to 15 years. Of companies giving four-week vacations, 62 per cent set the mark at over 25 years, 24 per cent specify 16 to 25 years, 7 per cent require 11 to 15 years and the remaining 7 per cent are spread all the way down to one year.

■ OFFICE FRINGE BENEFITS.
(National Office Management
Association, Willow
Grove, Penna.)

Business Failures Hit a New High

MORE BUSINESSES BIT THE DUST last year than in any year since 1941, but the business birth rate went up, too, keeping the business population at about 4.25 million companies.

Dun & Bradstreet estimates that 12,750 businesses failed last year. This is 16 per cent more than in 1955, and dollar liability of the failures was up 25 per cent to \$565 million. Tight money, stiffer competition, and the boom in mergers were the chief factors working against the small business man.

—Business Week 1/12/57

Briefcase Blues: The Problem of Executive Homework

EVERY WEEK-DAY EVENING, as brigades of business men pour out of offices all over the country, loaded briefcases go with them. More and more executives are taking more and more work home with them these days.

Assuming they must do it, how do they get it done amid the distractions and demands of family and friends, of telephone and television, and of sleep? What are the short cuts, if any, that can ease the burden of homework for the man who hates it, or whose family hates it?

To find the answer, *Today's Living* recently asked 400 leaders in business and professional fields to check their homework routine for one week. Here are some of the facts that emerged:

Six to seven hours of homework, including working time on trains, was the average for the week clocked. However, many of the respondents admitted they'd worked as many as 50 and 60 extra-office hours during other seven-day periods, and one claimed he'd once put in 80 hours of homework in a single week.

If you're in the habit of getting at your homework right after dinner and cleaning it up early, you're in good company. At least, that's what the majority does. But if you find you can work better after 9 P.M., when the kids have been tucked in for the night, you've still got plenty of kindred souls. And you're not alone even if you're a midnight toiler or

if you prefer to start working at dawn.

"But beware of dawn's dim light," warns an advertising executive. "The stuff I write that sounds brilliant to me then is what I tear up in the cold glare of the office."

The panel agrees, however, that the specific time of night work isn't nearly so important as the working conditions. That's why most executives who take their homework seriously have specially equipped "offices at home" complete with files, typewriter, and dictating machine.

But a surprising number do their homework in the living room ("right in the middle of it all," says a father of seven). Some insist they get more done by slipping into pajamas and taking their work to bed.

Fashions in homework-wear vary widely. A good many men believe they do better work if they dress as they do in the office. But that doesn't stop the majority from plumping for comfort: old work-clothes, slacks, sport shirts, slippers or loafers.

Still, warn the respondents, no matter how well dressed you are, or how well supplied with good light, working space, and sharpened pencils, your problems are just beginning. It's the distractions and interruptions that hurt. Here are those most frequently mentioned, with some suggestions for handling them:

1. *The telephone*: "Let it ring," says one badgered executive. "There's nothing you can do about it. It's a

curse, in the home and in the office, too. Makes all this homework necessary, then keeps you from doing it."

2. *Children*: This distraction calls for the utmost in diplomacy and singleness of purpose. One corporation lawyer has four young children, yet manages to do 15 to 18 hours of homework a week. He hides in his greenhouse.

A New Yorker, on the other hand, insists there aren't "any really bothersome" interruptions. "Living," he says, "comes before being a business man. If I wanted to be a hermit, I'd find a cave."

3. *Wives*: As far as husbands' homework goes, there are only two kinds of wives, in the consensus of the panel: tolerant or intolerant, neutral or hostile. A typical wife of the latter type "thinks homework isn't necessary and feels she's entitled to part of the evening."

4. *Television*: The panel split wide open on this one. "If it's baseball," says an editor, "I'm lost." But an attorney says: "I go to the spare bedroom and lock the door."

5. *Uninvited guests*: The panel's advice is simple: If you want to see 'em, see 'em; then do your work later. Otherwise, lock yourself in your study.

The best remedy for all kinds of distractions, a number of respondents agreed, is to be so deeply interested in your work that you need no specific disciplines to get it done. For others, the pressure of a deadline is enough, but many executives find it necessary to devise special methods of disciplining themselves. For example, a broadcasting executive has a special place for homework in the unfinished part of his basement. He explains, "There's a chair and a desk and some light—nothing else. So there's no point being there at all except to work." As if that weren't Spartan enough, he also uses "the old Army system: stay with it 50 minutes, take a 10-minute break, and repeat."

■ *John R. Lindsey*. TODAY'S LIVING, *The Herald Tribune Magazine* (© 1956, New York Herald Tribune, Inc.) December 30, 1956, p. 4:3.

How Industry Is Using Color

MACHINE TOOLS, overhead cranes, and work benches have never been considered among the world's loveliest objects, yet innumerable companies are spending substantial sums of money these days to cover these production facilities with attractive colors. Large sums are also being lavished on the interior decor of offices filled with equally utilitarian

typewriters and accounting machines.

Some skeptics may look upon this development as needless extravagance. But thousands of companies which have surrounded their employees with color in recent years report the benefits are more than worth the cost.

These firms are convinced that through use of proper color, production can be improved, accidents can

be reduced, and/or employees can be made happier and more cooperative. One color consultant comments: "Functional color is not merely interior decoration; it is not concerned primarily with appearance. It seeks to put color to work in certain specific ways and to prove its case in terms of practical results."

The application of this philosophy produces a somewhat startling effect on anyone who is used to the factory's traditional dress of dark brown and drab green. At the CBS Hytron plant in Danvers, Massachusetts, for example, steel beams in the assembly department are painted light turquoise, and the walls and ceilings are a light yellow. Machinery is also painted turquoise. The floor is gray and red. Considerable red is also used in entrance ways and locker rooms.

Color subtly influences our attitudes toward a number of activities. Most people associate light, bright colors with spaciousness, light weight, and comfortable temperatures, and dark, intense colors with the reverse. The association is so strong, the experts add, that color can often fool us. This was shown at Western Electric a number of years ago in an experiment involving light- and dark-colored tote boxes. The latter were considered much heavier than the former by the workers who lifted them, although actually all the boxes weighed the same.

The effect of color on emotional attitudes is equally dramatic. Many personnel men have found that by getting rid of drab green filing cabinets, dark brown furniture, and depressingly black production machines,

and making the dominant colors in the shop and office light grey, light green, light brown or blue, they generate a noticeable improvement in morale.

This is only part of the story, however. Besides its psychological effects, color has much to do with the efficiency of seeing. What the experts have learned here, in essence, is that by using the correct colors, factors causing eyestrain in a given work situation can be reduced or eliminated. The amount of light reflected on a workbench can be increased by painting the surface in a light color. If an employee has trouble seeing his work clearly, the surrounding area can be painted in a contrasting color. If there is too much light, subdued colors can be used to soak up the excess illumination.

In actual practice, of course, the job of selecting the proper colors for a given workplace is much more complicated than this. The examples, however, illustrate two of the key jobs performed by functional color: (1) it controls the amount of general light to meet the needs of a specific work situation; (2) it provides the right degree of contrast within the individual's field of vision.

Another important application of functional color is to highlight important points within the field of vision. The eye is built in such a way that it is quickly attracted to the brightest spot in this field. Thus, by painting emergency stop and start switches a bright orange, for example, the worker is able to see them quicker in case of trouble. Likewise, when such safety hazards as low-hanging

pipes, protruding levers and valves, bottom steps in stairwells, tote boxes that spend a lot of time sitting on the floor are painted in bright, arresting colors, the chance of accident is reduced.

The key question, of course, is whether all this theory about functional color actually pays off in dollars-and-cents savings. There are a number of indications that it does.

One of the classic proofs is the color job done by Pittsburgh Paint & Glass Company at the wire rope division of Jones & Laughlin Steel Corp. (Muncy, Penna.) shortly after World War II. Copious quantities of wine red, bright yellow, light green and similar untraditional colors were applied to machines, structural columns, pipes, walls, and floors of the firm's shops.

After workers had been living with this new color scheme for three years, plant officials reported that the number of lost-time accidents had been reduced 38 per cent; absenteeism had dropped from 5 to 2 per cent; turnover was down from 4 per cent to 0.4 per cent. Also, during the three-

year period, production efficiency increased 10 per cent. "An appreciable portion of this achievement," officials added, "can be directly attributed to our color dynamics program."

Zenith Radio Corp. has been using functional color in its shops for roughly the past seven years. During this period, there has been exactly one serious accident in the punch press department. Before the color scheme was changed, there had been at least two serious injuries per year. Painting overhead pipes, loading-dock edges, and similar hazardous spots in bright colors has also reduced the number of falls and head injuries.

Even the most ardent functional color enthusiast will decline to make the flat statement that color, by itself, can save every company substantial sums of money. But, say the experts, color—used in conjunction with other human relations tools—can do much to reduce these troubles. The experience to date indicates that the experts are right.

■ Phil Hirsch.
COMMERCE,

November, 1956, p. 22:6.

YOU WILL NEVER stub your toe standing still. The faster you go, the more chance there is of stubbing your toe, but the more chance you have of getting somewhere.

—Charles F. Kettering

AMA RESEARCH AND DEVELOPMENT CONFERENCE

AMA's Special Conference on Product Development in Medium- and Smaller-Sized Companies will be held Monday through Wednesday, March 25-27 inclusive, at the Palmer House, Chicago.

Capital Spending—New Highs Ahead

CAPITAL EXPENDITURES are heading for stability at a high level, according to the latest survey by McGraw-Hill's Department of Economics, which reveals that most companies plan to increase spending in 1957 and maintain this level in 1958.

For 1957, business now plans to increase spending 11 per cent. Plans for new plants and equipment will total \$40.2 billion for all business; in manufacturing, the total is \$14.4 billion, up 14 per cent. Commercial business, the oil industry, mining, and railroads together plan a slower rate of increase than in 1956. But utilities will accelerate their spending by about 25 per cent.

Capital spending plans for manufacturing industries do not appear to be as strong in 1958 as they were a year ago for 1957, but this is offset by utilities' plans for stronger 1958 spending.

At this juncture, business expects prices paid for new plants and equipment to be about 6 per cent higher in 1957 than in 1956—so that the physical growth in plant and equipment will be about 5 per cent higher than last year.

Difficulties in construction and delivery of equipment have delayed some 1956 expenditures until 1957, while, in some industries, part of the 1957 spending is being rescheduled for 1958. Cash shortages (resulting from lower profits and tight credit conditions) have also contributed to stretching out expenditure plans. But few outright cancellations have been reported.

—Industrial Distribution 1/57

Tests as a Sales Selection Tool: A Survey

MOST INDUSTRIAL SALES EXECUTIVES use tests but believe that personal interviews are more helpful, or at least as helpful, in evaluating and hiring salesmen. Of 81 executives participating in an *Industrial Marketing* survey, 53 report that they use tests to evaluate candidates for sales positions; 28 say they do not. About half (42) rate interviews and tests as equally helpful, while 37 believe interviews are of more value, and only one rates tests above interviews.

Executives making use of tests regard them as an effective evaluating tool, not as a replacement for experienced judgment and observation. Twenty-six of the respondents employ a standard "package" or battery of tests for evaluating sales applicants, and 24 use a battery of standard tests assembled specifically for the company's needs by a specialist. Two executives report using both methods, while only one uses new tests designed specifically for him by specialists.

In rating the effectiveness of five types of tests, the executives rated aptitude tests highest, with 36 votes; intelligence tests came in a close second with 35 votes. Personality tests got 29 votes; interest inventories, 23; and tests of trained skills, 8.

Are We Growing Too Fast?

TODAY'S HEAVY DEMAND for investment funds is taxing the resources of the entire financial community—a situation that in the past has often meant trouble ahead. Are we trying to grow too fast? Could our current rate of expansion lead to a crash and a downward spiral of the business cycle?

Ostensibly not. Business capital expenditures are continuing their advance, and are moving onto new high ground. Government outlays are beginning to rise again, as more funds are scheduled for highways, schools, farm programs and defense. Spending by consumers has been increasing too. With wages and salaries rising, and new auto models coming on the market, the prospects for consumer buying continue to look extremely favorable.

But one answer to the question of whether we are growing too fast concerns our ability to meet all these demands without generating an inflationary movement. The increasing demands on the part of consumers, business, and government come at a time when our economy is already operating at close to capacity. The situation is complicated by the fact that, in a number of industries, wage and salary payments have been advancing more rapidly than the increase in output per man-hour. In the long run, industry must raise prices if the cost of labor per unit of output is increased.

This is precisely what has been

happening in the past year. It would appear, then, that we are on the verge of trying to grow too fast, if indeed we have not already started.

But the problem is not only one of maintaining an over-all stability in the sense that we avoid inflation; it is also one of maintaining an appropriate balance of growth in key sectors of our economy.

Today, this question of balanced growth is posed most sharply in the crucial area of business capital investment. Business expenditures for new plants and equipment have been climbing steadily. The current rate of spending—\$46 billion for all business—represents a 25 per cent increase in 18 months. This dramatic rise in investment brings up the very important question of whether we are expanding our capacity too rapidly—whether, in effect, we are beginning to build too far ahead of the market.

In trying to answer this question, it may be useful to compare the current level of business investment with trends in the past.

First, consider the relationship between business investment and the nation's total production of goods and services. On the average, since the turn of the century, the United States has invested about 9 per cent of its total production in new plants and equipment. At present, the ratio of business capital investment to Gross National Product works out to slightly more than 11 per cent. By this method of measurement, then, the

current rate of investment is somewhat above its long-term relationship to our total national production, but not drastically so.

Still another way to look at this question is to see how rapidly our productive capacity is expanding. A considerable part of the money business spends each year on new plant and equipment goes for replacement and modernization, rather than for expansion. Currently, expansion accounts for about 61 per cent of the total.

Over-all, then, we shall have added approximately \$28 billion to the value of all business plant and equipment during 1956. Since we had the huge total of \$725 billion invested in productive capacity at the beginning of the year, current expenditures for expansion will increase our capacity by 4 per cent this year.

In the post-war period, the nation's total production of goods and services has been rising at an average rate of 4 per cent per year. Thus the current rate of increase in productive capacity seems to be in line with the nation's needs.

Can we expect consumer demand to rise rapidly enough to absorb the output of the new capacity that is now being installed? In the recent past, consumer demand has fully matched the 4 per cent increase in industry's capacity to produce and the 4 per cent annual rise in the economy's total production. When so many business men envisage a continued rise in their sales and are straining their resources to make that vision a reality, there are powerful forces at work to keep markets grow-

ing rapidly. The traditional American genius for effective salesmanship is one of these powerful influences.

Another such influence is the fabulous growth in expenditures for research and development. Research may well be our secret weapon against business downturns if it succeeds in stimulating a flow of new and attractive products at a rate that keeps consumer markets expanding. Consumer markets are also under the influence of the upward pressures exerted by our recent and amazing population growth and by the even more dramatic shift in income patterns.

Considering all these factors, it seems that the evidence does not support those who take a pessimistic view of our ability to expand consumption.

Indeed, our over-all economic performance so far seems to warrant cautious optimism. In the past year, we have successfully negotiated an adjustment in mortgage and installment debt. We have achieved a level of capital expenditures that is fully large enough to support a continued growth in the capacity and efficiency of our productive machine. And we have national economic policies—particularly in the monetary and fiscal fields—that are designed to help maintain a balanced economic growth at a sustainable pace.

■ *From an address by David Rockefeller (Executive Vice President, The Chase Manhattan Bank, New York, N.Y.) before the 51st Annual Meeting of the American Life Convention, Chicago.*

Leveling Peak Office Workloads: One Company's Approach

ONE OF THE MOST serious problems affecting normal office operation is frequent fluctuation of the work-load level. Our company's solution has made it possible for clerical personnel to handle peak loads without disturbing the normal routine.

The solution in our case was a work measurement program and the application of its findings in two ways: (1) a forecast of personnel assignments according to departmental work loads; (2) the creation of an exchange group which makes it possible to trade personnel among departments when the workloads fluctuate.

Work measurement studies normally show that the usual cause of unsatisfactory productivity is not that office personnel don't work fast enough, but rather that personnel are not matched with workload. Work measurement calls attention to such situations and permits closer supervision and better control of office operations to correct the imbalances it reveals.

At Mutual Benefit Health & Accident Association & United Benefit Life Insurance Co., our work measurement program is tailor-made for each department in which it is used. Generally, it falls into four stages: preparing to measure, gathering data, assembling data in usable form, and preparing procedures for reporting and comparing actual performance against measured standards.

The success of a work measurement

program is frequently determined by the approach used to install the study and procedures. We carefully inform all office personnel of what we are going to do, how we are going to do it, and why we are starting the program in the department in question. When employees have been fully acquainted with the program, work descriptions are made of the jobs performed in each department, and every operation is broken into units which can be timed. With the cooperation of the supervisor, the actual timing process is then started.

The basic control for timing an operation is the work measurement work sheet. After an operation has been broken into work units, each unit is assigned a code letter. The analyst—or the individual, if self-timing—notes on the work sheet the number of units (identified by code letter) done in a given time. The same work sheet can be used to record a variety of units performed. There must, of course, be a sufficiently large sample of timing on each work unit to insure accuracy.

After standard time per unit and per hour have been calculated, production standards are established and reviewed with the supervisor and the employees, and the department starts operating under the work measurement program. Each month the department reports two items: total monthly production, and accumulated total working hours for the department. Production figures may be

taken from several sources, including numbering machines, actual count, or number of work pieces handled by previous or subsequent operations.

The working hours for a department are derived from the assigned hours, plus or minus any variations. The formula used is: Total assigned time, overtime, and borrowed time, minus total absent time, training time and loaned time, equals total actual hours.

The next step is to compute the number of hours it should take the department to do the volume of work reported. This is found by dividing the production figure by the standard per hour.

The significant information for improved efficiency is the comparison of the two times, in terms of a percentage obtained by dividing actual hours into expected hours. This efficiency index shows the supervisor the performance rate of his department for the month. If the index is low, he can take such steps as re-aligning the work or lending and borrowing people in better balance with the work flow. Where individual performance records are available, he can also determine whether all his people are carrying their full share of the load. We normally expect a department to maintain an efficiency index of 85 or better.

The purpose of our advance training exchange, mentioned earlier, is to provide personnel for peak loads and to develop a group of trained workers for future assignment to operating departments.

Our exchange has three sections. The first is composed of select em-

ployees who learn key positions in various departments. Besides providing them with additional job opportunities, this gives the organization a pretrained replacement group. The second section is composed of a permanent staff, trained for several jobs, who can work in various departments during peak load periods. The third section is composed of people who are loaned to the exchange when work is low in departments to which they are normally assigned.

To eliminate nonproductive use of free time, the exchange accepts all free time and loans it to departments in need of temporary help. In its first few months of operation, the exchange has received almost 2,000 manhours each month. Without an exchange, this would have been time lost.

We find that for maximum effectiveness work measurement must have: (1) full support of top management; (2) supervisors who are prepared to administer the program and use the results; (3) employee understanding of the program; and (4) sufficient volume to justify the setting of standards for any single operation.

Our program has given us accurate answers to three important questions: *What is a fair day's work? Is staffing correct? Is time being utilized properly?* In turn, the answers have made it possible for us to improve our effective handling of peak loads, while reducing the cost of our general office operations.

■ D. A. Stivers. MODERN OFFICE PROCEDURES, February, 1957, p. 3:6.

Facts About Today's Sales Executive

NEARLY 2,000 SALES EXECUTIVES recently took time out to sit for a group portrait—a survey of its members made by the Sales Executive Club of New York. Here are some of the things NSE found out about the characteristics of a successful sales executive:

Income: NSE members reported a wide range of income averaging out to \$23,600. The largest segment (21.1 per cent) had incomes from \$10,000 to \$14,999, while the next largest group (19.7 per cent) reported incomes from \$15,000 to \$19,999. Incomes of \$20,000 to \$24,999 were found in a group almost as large—19.5 per cent.

Education: About 40 per cent of the sales executives are college graduates, as against 6 per cent of the general population. Even more significant as an indication of the growing professionalization of sales management, 14 per cent of these executives hold advanced degrees.

Recommended training: The executives were almost unanimous in recommending public speaking courses for salesmen seeking to improve their selling. Eight out of 10 felt the aspiring salesman should take training in psychology, and about as many called for courses in salesmanship as well.

—Thomas Kenny in *Dun's Review and Modern Industry* 12/56



—Reprinted from *Hey! Can't You Forget Business?* (Wall Street Journal Cartoons). Copyright 1953 by E. P. Dutton & Co., Inc.

College Research Does a Job for Industry

ENGINEERING COLLEGES are contributing more than graduates to meet industry's growing need for technical talent. They are conducting an increasing amount of industry's research, too.

The trend seems a happy one for all concerned. By sponsoring research projects at colleges and universities, corporations can engage the services of scientists and costly facilities that would otherwise be unavailable to them.

The schools are aided financially, and their efforts to contribute to scientific knowledge are enhanced. The faculty members involved find that their teaching takes on a new down-to-earth practicality as their work keeps them in the forefront of industrial developments in their own fields.

Aside from their considerable training value, company-sponsored projects give participating students a glimpse of what industrial research is like—of what to expect in the world beyond the campus. Many students are able to study for advanced degrees while contributing to such research under arrangements that refund their tuition fees.

Encouraging promising young scientists to continue their education beyond the bachelor's degree is often a difficult task these days because of the high starting salaries offered by industry. Interesting, practical research work helps.

What kind of research are corporations farming out to universities? A

sampling at New York University's Engineering Research Division shows how diversified the work is:

- The Kaiser Aluminum and Chemical Corporation has a \$6,000,000 fume-control program under way for its huge ore reduction plant at Chalmette, La. The key to the program was research in N.Y.U.'s air-pollution wind tunnel, developed over the last nine years at a cost of more than \$500,000.
- For the United States Steel Corporation, N.Y.U. statisticians analyzed problems relating to the amounts of various raw materials that should be charged into blast furnaces.
- For Loewy-Hydropress, Inc., the division's solid mechanics laboratory did a photoelastic study of components for a 500,000-ton hydraulic press.

Dozens of other major companies have sponsored research at the university on metallurgy, petrochemicals and hydrocarbons, coatings and surface treatments, jet and rocket fuels, transistors and electron tubes, instruments, oil drilling, atomic energy and other fields.

The shortage of technical manpower is an important factor in sending companies to universities for research. The only alternative to seeking help at an institution whose staff includes an expert on a particular problem may be to hire the expert away. Even if he should consent to leave the school, the company would then have to consider whether he could be kept at work in his field steadily enough to be worth his pay.

Another factor is the objectivity that universities, with no economic or technical axe to grind, can bring to research. And industry associations frequently go to the institutions for research that member companies are interested in but do not have the time or resources to handle themselves.

University officials say that more and more research from private in-

dustry seems to be motivated by appreciation of the fact that, unless the universities are able to turn out creative young scientists in adequate number and quality, the nation's technological and economic progress may be endangered in the years ahead.

■ Jack Ryan.

THE NEW YORK TIMES,
Nov. 26, 1956.

Executive Expense Accounts: A Survey of Company Practices

BY FAR the most popular way to handle the executive's expenses is by direct reimbursement for expenditures made on the company's behalf; 55 per cent of the companies responding to a recent *American Business* survey report such a policy. Another large segment (37 per cent) combine the direct-reimbursement method with direct payment—the practice of having bills sent directly to the treasurer's office with no money passing through executives' hands. This is a device that has become widespread in recent years as airlines, restaurants, Western Union, car rental agencies, and others have introduced and promoted the credit card system begun so long ago by the hotel chains.

Fewer than 1 per cent of the responding companies rely on the direct-payment method to the exclusion of all others. If bills could be submitted to the company for all the executive's outside expenses, the situation would be an ideal one from his standpoint. He would report nothing to tax au-

thorities, and would have little worry about proving the propriety of his expenditures to anyone but his own company. Even so, he should keep a record of charges he has made to protect himself against the possibility of a claim by the Treasury Department that some of them were of a personal nature.

Flat expense allowances have been established by 7 per cent of the responding companies. Spectacular expense allowances are generally the property of top-paid executives in nationally known corporations. Moderate allowances are the more usual thing, set up on a monthly basis (usually provided for in the employment contract) or as a daily allowance to be spent as the executive's judgment dictates.

In the process of liberalizing expense handling, several companies have reached the point where they catalogue expense accounts with other fringe benefits. They have broadened entertainment policies, tendered ex-

pense accounts to executives at lower levels. They lean over backward in justifying their executives' claims, and encourage them to join social clubs and take their wives along with them on business trips. Some say that an increased awareness of the importance of public and customer relations has helped to bring on such liberal policies.

There are just as many companies, though, that have taken an opposite tack. Spurred on by Treasury Department demands, they insist on the strictest kind of accounting. Many insist on their executives charging every item that can be reasonably charged.

A small number of the companies surveyed (approximately one-half of 1 per cent) report that they cast aside expense worries by building up executive salaries to a sufficiently large amount to cover anticipated expenses of the job. Weekly or monthly expenditures are averaged, and the executive receives the average figure in his pay check.

This is a fine arrangement, in terms of company bookkeeping; there is practically none to bother with. For the executive, though, it is less satisfactory. His record of expenditures must be extremely detailed, since he cannot rely on his company for help in proving not only amounts, dates, identity of payee, and all the rest, but also the circumstances under which the monies were spent.

By whatever method executive expenses are handled, control is a matter of concern. This is true whether policies are described as "liberal" or not. Spending habits of the men at

the top set an example for the entire organization, so it is especially important that those in high places have the same consideration for the company's money that they expect of their subordinates.

Of all the companies surveyed, 37.5 per cent call their control policies "discretionary," or the equivalent. With that, most of them add qualifications. They don't believe in spending orgies, nor do they want to treat the executive like a child who must be taught how to handle his allowance. Emphasis is on reasonableness and good judgment.

In 45.2 per cent of the companies reporting, approval is required, either before or after the money is spent. Of this group, the president, executive vice president, or treasurer is the man who most often gives it.

Budgeting considerations provide controls in 8 per cent of companies. Some draw up lists of maximum amounts for meals, hotel rooms, tips, etc. Others set up departmental expense budgets by the month or year, and department heads are expected to administer them.

Controls take the form of periodic audits in the last 9.3 per cent of companies covered in our survey. The job is usually done in the controller's office, but there are occasions when the president himself handles it.

There are reports that the company comes out better under a discretionary type of expense arrangement. If he has an allowance, an executive is expected to live within it. How he justifies his expenditures is between himself and the tax official. But with a discretionary account, under which

he is reimbursed for expenses that require no prior sanction, his opportunities for "padding" are good.

The fact of the matter is, however, that executives as a group have highly developed consciences. The idea of claiming reimbursement for money they did not actually spend is repugnant to an overwhelming majority of those surveyed, and the psychological

effect of a discretionary accounting system sets their already proven honesty on a still firmer foundation. "If the company takes our word for it," they seem to be thinking, "and trusts us to use our own good judgment, how can we take advantage of that trust and turn it to personal gain?"

■ AMERICAN BUSINESS,
January, 1957, p. 29:4.

Of Time and the Income Tax

SOME BUSINESS ENTERPRISES work more than half a year just to pay off their income taxes, according to calculations based on the income and tax figures of 1,071 companies listed on the New York Stock Exchange. Here are some typical examples, by industry groups:

Thirty-two companies in the building trade, with combined net income before taxes of \$451 million in the latest available fiscal or calendar year, worked 23.7 weeks to pay their \$204 million in federal taxes.

Seventy companies in the food products and beverage trade worked 25.3 weeks to pay \$467 million in taxes.

Sixty-eight companies in retail trade, with a combined net income before taxes of \$1,117,000,000, worked almost 27 weeks to pay their total taxes of \$566 million.

Nine companies in the office equipment industry, with net income before taxes totaling \$194 million, had to give the equivalent of 26.2 weeks of net income to pay their taxes of \$97 million.

For the entire 1,071 companies, with a combined net income before taxes of \$28,482,000,000, Uncle Sam's tax bill of \$12.4 billion isn't paid until these companies have worked, during a calendar year, into the middle of the first week in June. From that time on, theoretically, their net income is for their own use.

—*The Biddle Survey* (Biddle Purchasing Co.,
New York) 12/18/56

AMA SPECIAL MANUFACTURING CONFERENCE

A Special AMA Manufacturing Conference on Production Forecasting, Planning, and Control will be held Wednesday through Friday, March 20-22 inclusive, at the Drake Hotel, Chicago.

Air Freight: A Cure for Shipping Headaches?

AIR FREIGHT LINES are becoming more important in the transportation picture. At least 10 per cent more than the record tonnage of air cargo hauled in 1956 will reach its destination via the air lanes this year. In the next decade, it's predicted that the 325 million ton-miles of air freight carried in 1956 will climb to an annual 800 million ton-miles by the end of 1965.

A shipper can often achieve real economies by using air transport, as is demonstrated by these two case histories:

1. An electronic tube manufacturer maintained two warehouses with a 60-90 day inventory. By depending on quick air transport, it was possible to reduce inventories by \$1,762,000. Reduction in inventory taxes, insurance costs, and interest on the released capital created a saving of \$78,983 over a six-month period.

2. In the case of a Midwestern pump manufacturer with seven regional warehouses, \$1,680,350 in inventory capital was released. Reductions in fees, interest, insurance, auditing costs, and other expenses meant a net saving of \$97,000. Six warehouses were abandoned.

There are other advantages to using air freight: reduced packaging costs, expansion of a sales area through quick delivery to distant points, or moving into a new sales area on a trial basis without building major warehouse facilities.

But heavy promotion of air freight

as a cost-cutting device has not yet begun. Many think it is needed. The majority of freight managers still regard air freight as an emergency device, though all agree that an increasing tonnage of their output is moving by air.

In most cases, shipment is made at the customer's request. Rather than "emergency" shipments, they are called "expediting" shipments. The customer agrees to pay the additional freight costs to receive his order more quickly.

Most companies would ship more goods by air if more cargo space were available. Says one typical traffic manager: "I spent all weekend looking for air cargo space to ship 10 refrigerators to Dallas. Now I just got an order to ship 10 more to Rockford. So I start all over again looking for space."

Air freight is also being used to crack export markets. One international air shipper is beefing foreign sales by offering one-week delivery of electronic equipment. By water, it would require three to four weeks. His foreign distributors, assured they can carry less inventory and that they need not plan as far ahead or commit as much of their capital for inventory, are beginning to boost their sales.

Air freight has made surprisingly fast progress, despite the handicaps of (1) inadequate cargo space, (2) need for more frequent, scheduled freight runs, (3) a higher cost than surface transport, and (4) continuing feel-

ing among freight managers that air freight is a premium service.

To meet the demand for more space and more frequent scheduled flights, air freighters are increasing their hauling capacity. Flying Tigers has ordered 10 Super Constellations worth \$22 million for 1957 delivery. United Airlines will increase cargo capacity by 18 per cent in 1957; about 330 big ships are on order for 1957-1958 delivery. All will have some cargo space, and at least 45 will be all-cargo.

Air freight rates have been coming down, but there is a difference of opinion on the trend future rates should take. One school advocates moving up rates to cover current expansion costs to a greater extent. The

other, noting recent railroad freight rate increases, recommends holding rates at present levels to lure business from other carriers.

Airlines are also expanding new types of freight service. Slick's "Operation Condiv," for example, is promoting charter flights for industrial accounts on a regular basis. The same airline has reduced its minimum to \$1 to build a small-package freight business.

A recent agreement between Greyhound Corp. and 16 airlines and two freight forwarders will bring small-package air freight to 6,000 communities without this service at present.

■ K. W. Bennett. *THE IRON AGE*, January 10, 1957, p. 19:3.

Twenty Years from Now: A Forecast

A HISTORIAN has said that "often do the spirits of great events stride on before the events, and in today already walks tomorrow." Never before was this insight truer or more meaningful than it is today. However impressive the events that have filled the last 50 years, or even the last century, they will be eclipsed by the events of the next 20 years.

Consider twenty major developments likely to affect all of us within that period, keeping in mind that they may be advanced or retarded by many imponderables—especially in the social and political spheres:

1. *Nuclear energy.* We shall have learned to extract atomic fuel from

relatively inexpensive materials. Nuclear energy will be brought to a practical state of peacetime usefulness, not only for industry but for planes, ships, trains and automobiles. Direct conversion of atomic energy into electricity will be a fact, and atomic batteries will supply energy for industry and for the home.

2. *Solar energy.* The energy of sun rays will be effectively harnessed and in worldwide use.

3. *Communications.* Television will be completely global; man will be able not only to speak and hear all around this planet, but to see the entire world in natural colors. Individuals will be able to hold private

two-way conversations, and see each other as they talk, regardless of the distances separating them.

4. *Transportation.* Jet-propulsion and rocket-type vehicles, using nuclear fuels, will travel at speeds as high as 5,000 miles an hour with greater safety and comfort than today's aircraft. Guided missiles will transport mail and other freight over vast distances.

5. *Automation.* Already well launched, automation will reach a crescendo under the impact of cheap and abundant power. It will increase production, decrease costs, increase employment, reduce hours of labor and increase leisure.

6. *Materials.* Chemistry will make spectacular strides in providing materials tailored to meet almost any imaginable specifications.

7. *Electronic light.* Electroluminescence, or "cold light," now emerging from the research laboratories, will change the appearance of our factories, streets, stores, highways and homes. It will also ultimately replace the TV tube altogether with a thin, flat-surface screen that will be hung like a picture on the wall.

8. *Computers.* Recording and accounting will be taken over by robots. Business procedures, industrial operations and fiscal data will be gathered and analyzed automatically. New products will, for the most part, have their performance predicted by computers, eliminating the need for actual working models.

9. *Food.* Striking developments in irrigation and flood control, more efficient use of solar energy, the electronic acceleration of germination

and growth, and new chemical and biological discoveries will greatly expand mankind's food resources. The oceans will be efficiently "farmed" for nutritive products. Famines will be eliminated.

10. *Health.* The close ties now developing between biology, chemistry and physics, applying the new tools of electronics and atomics, will bring an avalanche of improvements in preventive medicine. Man's life span will be further extended, probably within hailing distance of the century mark.

11. *The home.* The housewife's dream of an all-automatic home will be realized. The day's chores in the home will be prescheduled, with all the tasks performed electronically.

12. *Climate.* Not only will the prediction of weather for months and even years ahead be perfected, but major steps will have been taken to make and control weather as desired.

In the area of technological progress, the shape of things to come already can be discerned in the research laboratories at home and abroad. In the social and political areas, the most unpredictable force of all—human conduct—tells the story. However, changes in physical environment greatly influence human conduct.

13. *Communism.* Within the next twenty years Soviet Communism will collapse under the weight of its economic fallacies, its political follies, and the pressures of a restive, discontented population.

14. *People's capitalism.* The prestige of the Marxist solution of social problems will decline as its limitations and errors become increasingly apparent. As Socialism is stripped of its

popular appeals, the dynamics of a people's capitalism within a democratic framework will be intensified.

15. *Living standards.* The technical developments already listed will usher in an era of relative economic abundance. The most pressing problems will not be the use of labor but the intelligent and beneficent use of leisure.

16. *Education.* Man will enter upon a period of universal education. Highly geared technology will put a premium on brains: ever more skilled scientists, engineers, designers, technicians, and others. This demand will tend to enlarge educational facilities and promote the arts and sciences.

17. *Entertainment.* Every form of art and every type of entertainment will be readily accessible in the home. The range and variety of programs will embrace everything created by the human mind.

18. *Government.* Because of unprecedented access to information, public opinion will be a more decisive element in the political life of nations. Government and people will thus be brought into closer correlation.

19. *War.* Universal communications and speedy transportation will shrink the world to a neighborhood. All nations will find it imperative to develop and adopt practical means for disarmament based on effective inspection, control and enforcement.

20. *Science and religion.* The gradual elimination of physical hungers will deepen the more elemental hunger for faith and salvation, for age-old values beyond the material and temporal.

■ *From the Golden Anniversary address by David Sarnoff (Chairman of the Board, Radio Corporation of America)*

Getting Across to Your Salesmen—On Tape

SENDING TAPE-RECORDED REPORTS to representatives in the field is paying good dividends to a textbook publisher, Webster Publishing Co., St. Louis. The company found that tape recordings from headquarters, made by the president or the sales manager, bring a touch of company personality and enthusiasm that is lacking in the usual written memoranda sent to field salesmen and other representatives.

After they have played the tapes on their portable recording machines, field representatives can erase them, and record their own reports for management. The company says that information comes in on the tapes that it never received before, because the tone of a man's voice reveals how he feels about what he is reporting.

—*Management Digest* 12/56

THE MAN WHO ROWS THE BOAT generally doesn't have time to rock it.

—Anonymous

More Women Join the Work Force

MORE WOMEN OVER 35 are quitting the home to take jobs in stores, offices and factories. Once the exception, the working grandmother is becoming commonplace. In fact, if women keep taking jobs at the rate they have been for the last five years, over 17 million married, widowed or divorced women between 35 and 64—about half the women in this age group—will be working by 1975, according to figures released by the Bureau of the Census.

Based on the same growth rates, the number of working women of all ages will total 32½ million of a total working population of more than 93 million. In comparison, of a labor force last year of almost 69 million, women numbered just under 20 million, but fewer than 10 million were married or formerly married women 35 to 64 years old.

Several conditions have combined to create job opportunities for women over 35. The number of younger people available to take new jobs, already small because of the low birth rate of 20 years ago, has been cut further. Younger men are spending more years in school and college, while more women are marrying, and marrying earlier. At the same time, partly because of improved social security provisions and pensions, men over 65 have increasingly sought retirement. The armed forces have been maintained at high levels, and the defense production program has been enlarged. The only large source of additional workers, says the bureau, has been women over 35 free to take jobs outside the home. In fact, it adds, if working mothers and grandmothers had not been available to take the extra jobs, "there is every reason to doubt that present levels of employment could have been achieved."

—The New York Times 11/25/56

White Collars Outnumber Blues

WHITE-COLLAR WORKERS have replaced production workers as the biggest single group in our working population, *Commerce* reports. A breakdown by the U.S. Bureau of the Census shows that the number of persons in white-collar occupations—those in the professions and related tasks, proprietors and managers, and clerical and kindred workers—exceeded the total number of craftsmen, operatives, and laborers who make up the blue-collar classification by about one-half million.

The Census Bureau's employment figures show that there were 25.4 million persons with white-collar jobs in April of last year as compared with 24.9 million blue-collar workers. By contrast, there were almost a million more blue- than white-collar workers in April, 1955 (24.7 million as against 23.8 million), and back in 1945 there were 21.6 million blue-collar workers as compared with only 17.5 million in white-collar jobs, a blue-collar margin of over 4 million.

Shortcuts to Executive Failure

THE GROWING DEMAND for competent executives has stimulated a man-hunt of immense scope, one important aspect of which is the problem of determining the personal characteristics of the effective administrator. Successful managers have been analyzed at work, at home, and at play in an effort to discover what traits they have in common.

As one possible approach to the problem, consider some of the behavioral characteristics of the *ineffective* administrator:

1. *The "all or nothing at all" complex.* One of the most common characteristics of the ineffective manager is his tendency to attempt only perfect solutions rather than compromise solutions that can be accomplished. Administratively, this "all or nothing" complex leads to two extremes—both of which are harmful to the organization. On the one extreme it may mean that improvements are never undertaken because the ideal solution isn't currently possible.

On the other extreme it may mean that the action undertaken is too radical, subjecting the company to violent upheaval. The successful administrator must on occasions tolerate conditions of inefficiency rather than court failure by attempting to clear all the obstacles with one great push.

2. *The urge to act from expediency.* Yielding to immediate pressures and ignoring the long-run effects of the solution may permanently weaken the executive's influence in the organization. It demonstrates a

lack of convictions as to long-run goals or else an unwillingness to stand up and be counted on issues important to the welfare of the company. Either situation results in administration by default. A policy of peace at any price has seldom produced peace but has always raised the price.

3. *The compulsion to win.* The manager should consciously develop the ability to lose a point gracefully, for an obsession with winning at all costs is the single largest deterrent to full participation by colleagues and subordinates. There can be no battle of ideas within the organization if the reward is disfavor and ill will from the boss. Permitting decisions to be discussed and taken apart before committing the organization to follow them represents about the only method available for pretesting administrative ideas.

4. *The "black or white" attitude.* High among the factors that contribute to ineffective administration is the tendency to classify everything as all good or all bad. Actually, the manager must discriminate more often between acceptable alternatives than between right and wrong. Whether the need is for a choice between conflicting views or reassurance as to proper direction, questions reaching the top level must be treated with respect.

5. *Lack of a sense of proportion.* This fault results in overemphasizing incidents and problems that are of little real consequence to the organization. It not only wastes the energies

and attention of the executive but it diminishes his influence on matters that are important.

6. *The failure to remain impersonal.* The manager must maintain a sufficient degree of aloofness to permit administrative action without its being taken personally. Admittedly, he must be responsive and friendly so that his colleagues will not hesitate to approach him. But he must recognize the difference between liking his associates and liking everything they do. Personal relationships that inhibit detached evaluation and frank criti-

cism represent a disservice to all concerned.

7. *The assumption that people always act logically.* Individuals bring to every situation their own personal experience, bias, desires, and needs. This requires that the administrator must at times temper his decisions to allow for the personal equation.

■ Ray E. Brown.

PERSONNEL INFORMATION BULLETIN
(Veterans Administration,
Washington 25, D.C.),
December, 1956, p. 2:4.

Recent Progress in Health Insurance

THE PAST FOUR YEARS have witnessed phenomenal progress in the field of private voluntary health insurance. One indication of this can be seen in the increase in the number of persons having insurance protection. Between December 31, 1952 and June 30, 1956 the number of persons having protection against hospital expenses increased from almost 91 million to 110 million, or nearly 21 per cent. Protection against surgical expenses increased, in this same period, 29.7 per cent for all types of insurers and 27.8 per cent for insurance companies. Protection against regular medical expenses increased 62.6 per cent and 83.4 per cent respectively.

Another indication of the growing effectiveness of private health insurance is the growth in the number of insurance companies offering such

protection to the public, which rose from 514 to 707 in the three years ending January 1, 1956.

Further evidence of progress lies in the broadening of underwriting concepts in this area. An example of this is the broader availability of insurance protection to persons in the older-age brackets.

The problem of paying the costs of medical care becomes more acute for those beyond age 65. Not only do the costs of medical care increase in the later years, but income or means for the payment of such costs is often reduced. Continued progress is being made by private health insurance in extending to older persons insurance against these costs. Among the principal methods being used today by insurance companies to accomplish this are the following:

1. *The continuation of group in-*

insurance on older workers. A survey made three years ago by the Bureau of Accident and Health Underwriters indicated that, of 43 companies writing 72 per cent of all group accident and health insurance, 37 made available the same coverage for active over-age employees as for others. The other six limited the coverage in various ways. It would appear, therefore, that older workers are, or can be, generally insured today in instances where a group insurance plan is in existence.

2. *The continuation of group insurance on retired workers and their dependents.* The same survey revealed that, of the 43 insurance companies writing 72 per cent of all group accident and health insurance in this country, 36 in 1954 wrote coverage on retired employees and their dependents. It is reasonable to expect, since this is a recent development, that more companies yearly will make this coverage available.

While the present number of retired workers presently covered by this means is not known, and the future potential is difficult to estimate, some significant indications are available.

A very recent survey of 160 group plans made by the Health Insurance Association of America shows that, while in January, 1953, 24 per cent of groups with insurance company medical care plans provided for a continuance of coverage at retirement through the group plan, 48 per cent of these plans today provide for this coverage at retirement.

Not only has there been an increase in the proportion of plans pro-

viding for continuance of coverage at retirement, but the types of benefits and amounts of benefits available at retirement have both broadened and increased.

3. *The continuation on an individual policy basis of coverage originally provided by group insurance.* It is now general practice in the field of group insurance to make available the right of conversion to an individual or family policy upon termination of employment or membership in the insured group. This is an important privilege to older people who leave the group due to retirement and is one which has largely developed since 1952.

Another recent development of appreciable import is the extension of the group insurance principle to persons employed in small groups. This is being accomplished in several ways: expansion of traditional group insurance techniques to include the enrollment of associations of small employers; insuring trade associations; and insuring the entire membership of labor unions whose members are generally employed by small employers.

Another method used by some insurance companies is that of franchise or wholesale insurance. This form of insurance was, in fact, developed some years ago for the specific purpose of presenting some of the advantages of the group insurance approach to many of those groups who, because of statutory or group underwriting limitations, could not obtain group insurance. In this manner, groups of five or more persons are insured. The approach has been ex-

tended to include groups of professional persons who at one time were not insurable under group insurance methods.

Since 1952 another approach has been developed: the direct writing on a group insurance basis of groups of fewer than 25 lives. Many companies have been experimenting in this approach and the number of those continues to increase. The experiment has been aided by the reduction of the statutory minimum in several of the states. As a consequence, many insurance companies today are writing groups of 10 or more employees on a group insurance basis, and several are insuring groups as small as four employees.

A survey conducted by the Bureau of Accident and Health Underwriters

in 1955 showed that in 1954 the writing of 25 insurance companies included (exclusive of statutory disability insurance coverage in three states) 6,355 small groups of less than 25 employees. That number grew from 3,126 groups insured by these same companies in 1952—an increase of over 100 per cent. This rate of growth, projected to 1956—and considering such factors as the ever-increasing number of companies writing the coverage, the expansion of this coverage to smaller and smaller groups, and the inclusion of the figures for all companies now writing this form of coverage—should produce an impressive total.

■ J. F. Follmann. *THE WEEKLY UNDERWRITER*, January 26, 1957, p. 265:3.

What Teen-Agers Think of Business

BUSINESS IS MISSING THE TARGET with its efforts to inform young people about the world of commerce and industry, judging from a recent survey of 1,923 teen-agers in 42 cities throughout the country. Conducted by Gilbert Youth Research Co., the survey revealed that the attitude of many teen-agers could be summed up in the statement: "Big businesses run everything in America—they have all the money."

Asked to express whatever came into their minds when they heard the phrase "big business," 31 per cent responded by picturing a sort of giant monopoly spread across all America. Many feared that in the future all free enterprise would be swallowed up in one or two gigantic trusts.

One third of the young people believed that electric and telephone companies make between 25 and 49 cents on every dollar of income; one out of 10 thought they make 50 cents or more. Only 19 per cent of the teen-agers could even vaguely define common stock or had any idea of the number of stockholders in large companies.

—*Industrial Relations News*
(230 West 41 Street, New York 36, N.Y.)

10/20/56

Controlling Quality in Purchasing

VENDORS supplying manufacturers with parts and materials want to do a good job, because their business is dependent on satisfying the customer. But they often will place emphasis on the minor quality characteristics and neglect the major ones. This is no fault of theirs, for although they know their own manufacturing processes and capabilities, they don't know the customer's. However, specifications can be clarified, and defects can be classified as to their seriousness. A properly informed vendor, with definite knowledge of what is needed, will generally deliver the goods.

Of course, when a supplier is causing trouble, the production foreman or inspection department will inform the purchasing department. The action that will be taken then will be based on the purchasing agent's judgment regarding such factors as the availability of other suppliers and the economic factors involved. But is this judgment based on sound scientific analysis? Does the purchasing agent have a tool by which he can foresee future trouble? Is he able to make a purchase from a supplier with fairly positive assurance that the quality will be good? Does he have a definite record of all suppliers, and how they perform? Here is where quality control can be of great assistance.

An effective quality control program has a good incoming inspection department, where all material used in the fabrication or assembly of product is inspected. Various statistically designed sampling plans are

used, depending on the nature of the product, the amounts received, and the degree of assurance required. Of course, there are certain risks involved in sampling, but if these risks are known, the sampling plans can be adjusted accordingly. In any event, 100 per cent inspection of all lots can be eliminated in favor of sampling at greatly reduced inspection costs. Not only that, but data collected on the vendor's process can enable the customer to determine whether he can reduce his inspection even more, or whether he must look carefully and closely at every shipment the vendor sends in.

Every item of purchased material must have a history card, on which the incoming inspector lists the invoice number, amount in the lot, size of sample, per cent defective, and comments. There is a space for marking acceptance or reason for rejection. On one side of the card, ruled in squares like a chart, the per cent defective is posted. The card also tells the inspector what items in this product are to be inspected for, and which are critical. This vendor-rating card is a continuous record of the purchased part and of the vendor. When two vendors supply the same part, two cards are used. After four or five shipments, the card shows immediately, at a glance, the quality level of the vendor on that particular part. It is a red flag for increased inspection when quality is bad or reduced inspection when quality is good.

The vendor cannot supply 100 per

cent perfect material. Just how much defective material you can stand in your process is of vital importance to him. It may be possible to accept some product as much as 5 per cent defective, whereas defects in other material may have to be as low as 1 per cent. Whenever a lot of material does not meet the quality level, the purchasing agent will usually decide whether it is cheaper to return the entire lot for correction or to have the defectives sorted out for return. Much will depend on the availability of material and the past record of the supplier. By looking at the vendor-rating card, the course of action can be determined.

In this respect, the Ford Motor Company and others have initiated a program of vendor certification. This is simply a supplier-consumer agreement on quality. It is like telling a vendor that, as long as he produces parts to the quality level required, he will continue to get business with the company.

If the supplier provides a lot of parts within the acceptable quality level, it is accepted by the consumer as a total lot of good parts. Any defects which the consumer may later find in this lot are either reworked or junked at his own expense. The consumer has the right to reject the entire lot of material if his sampling shows it to be defective. Agreements such as this, with some modifications, are in operation in a great many plants throughout the country.

There are a number of other places where quality control helps the purchasing agent. For example, if a buyer has examined the goods he receives,

there is no implied warranty as regards defects that such an examination ought to have revealed. Therefore, any examination made should be a good one, because a hasty inspection may deprive the buyer of the protection the law would have given him if he had not examined the goods at all. The quality control department can point out how many pieces to look at and what to look for, thus giving the inspector the benefit of the scientific method of sampling for greater assurance.

Quality control can also help the purchasing agent in other ways. Few companies are fortunate enough or large enough to maintain a testing laboratory, yet there must be sound basic facts on which to make purchasing decisions. Quality control can make the required tests on a small sample and can accurately determine the qualifications of each product. The use of statistical techniques in correlating the data for a number of similar items will result in an accurate analysis and enable the purchasing agent to choose the best-qualified supplier.

No system will work without the proper cooperation of all parties involved. If quality control does not feed back the information the purchasing agent needs to control his suppliers, the system will fail. If the purchasing agent ignores the quality control department when he writes up his purchase requisition, then he is failing to take advantage of a scientific tool created for his use.

■ *From an address by Henry J. Jacobson before the American Society for Quality Control.*

Coming: More Government Regulation

THE NEXT 20 YEARS will see government playing an even greater role in our economy than it has in the past two decades. This is a far cry from the days when it was believed that "the less government in industry, the better"—a policy which forced governmental action into a negative pattern: forbidding acts thought to be adverse to the public welfare.

The tendency toward more government intervention in the economy will probably take the form of administrative decrees and court rulings rather than direct competition with private enterprise. Barring a depression or war, which would necessarily increase government expenditures, the government's importance as a consumer and producer is likely to diminish in the next 20 years. But intervention by law through commissions and courts is here to stay; it has by now become an integral part of our economic life.

Regulation of the money supply, for example, has since 1913 been the primary concern of the Federal Reserve System. By stimulating or retarding the credit supply, it can strongly influence the commercial banking system and, through it, the entire economy. As more is learned about the use of such measures as a stabilizing influence, these powers are likely to be increased.

In the field of labor, government intervention is almost certain to become greater. The tremendous growth of labor unions, culminating in the formation last year of the powerful,

almost monopolistic AFL-CIO, will force the government to take steps to prevent labor's abuses of power just as it now prevents abuses of power by big business. Another cry for government action will undoubtedly be heard from the consumer-public when the close relationship between a rise in wages and a rise in prices seeps into the general consciousness. As far as collective bargaining itself is concerned, the rights and duties of both labor and management will become more and more a matter of public law.

The government will undoubtedly play a greater role in regulating the structure and interrelationships of corporations. The possibility of big corporations' impairing competition in certain situations has long concerned the government, and through natural growth and mergers these companies will doubtless become even bigger and more powerful in the future. In addition, new production methods and other technological innovations create new relationships which will be increasingly subject to scrutiny by the Department of Justice. An especially powerful weapon against illegitimate practices has recently been developed: the "consent decrees" reached between the Department's antitrust division and a number of leading corporations. These agreements, arising from antitrust investigations, are an alternative to court action and mark a trend toward closer cooperation between government and industry in maintain-

ing free and competitive conditions.

Somewhat similar is the situation in regard to mergers. Prosecution of illegal mergers is a long and costly operation for both the government and the business involved. For this reason, big companies planning a merger are approaching the government before going ahead, in order to get an informal opinion on the legal aspects of their contemplated action.

There will also be government action on the patent front; a complete overhauling of our patent laws by 1975 can be predicted. Now based on the principle that individual inventions are the foundation of technological progress, the laws may be changed to reflect the much more complex modern method of solving problems and inventing new processes by cooperative research within large corporations.

All manner of public works are called for by the growth of population and the economy, and federal, state, and local improvement programs (highways, flood control, sewerage systems) will tend to give government a stronger economic position. But we will probably see direct competition with private builders give way to contracts on a cooperative basis.

Foreseeable, too, is the virtual elimination by 1975 of government ownership of factories and power

plants (even atomic power plants), although this will be accompanied by a large increase in the number and size of buildings for public use and welfare, such as schools, courthouses, and post offices. Maintenance of the capital investment in these buildings will insure a strong governmental influence in the economic life of every community.

Apart from the regulatory and participative roles of government, there is the important role of compiling information and performing countless other services. These functions of government are highly valuable and are certain to be expanded as new needs arise. Census data, for example, furnish the basis of long-term planning by industry, and their scope will be expanded.

The old animosity of industry toward government regulation may be as much a thing of the past by 1975 as the ruthless business practices of 50 years ago are now. An important factor in this change will be the leadership in business; government, and labor of the students now in business schools. An intertwining of interests, an atmosphere of cooperation among all parts of the economy—these will be the dominant notes struck by the leaders of 1975.

■ Oswald Knauth.

CHALLENGE, December, 1956,
p. 18:5.

AMA INSURANCE CONFERENCE

The AMA Spring Insurance Conference will be held Wednesday through Friday, May 8-10, at the Statler Hotel, New York.

An Administrator's Prayer

Grant me the self-awareness to know honestly what I am, what I can do, and what I cannot;

Grant me the judgment to channel my energies into those avenues which best utilize my abilities and do not require talents which I do not possess;

Grant me the wisdom cheerfully to admit error and learn from my experiences, that I may grow and develop and avoid repetition of mistakes;

Grant me the humility to learn from others, even though they be younger, less experienced, or of humbler station than I;

Grant me the courage to make decisions whenever they are necessary and to avoid rashness when they are not;

Grant me the sensitivity to judge the reactions of others that I may modify my actions to meet the needs of those affected;

Grant me the consideration to recognize the worth of each individual, and to respect all those with whom I have contact, neither stifling their development nor exalting myself at their expense;

Grant me the perspicacity to acknowledge that I can be no more effective than my subordinates enable me to be, and to deal with them so that they can help me by helping themselves;

Grant me the tolerance to recognize mistakes as a cost of true learning and to stand behind my subordinates, accepting my responsibility for their actions;

Grant me the insight to develop a personal philosophy, that my life may have more meaning and satisfaction and that I may avoid capricious action under the pressures of expediency;

Grant me the patience to live realistically with my circumstances, striving always for the better, but recognizing the perils of too rapid or too drastic change;

Grant me all these things, dear Lord, that I may live a more useful life, through serving my fellow men, and, through them, serve Thee.

—Robert L. Katz in *Harvard Business Review* 1/2/57

TYPE OF WORK OFFERED, reputation of the company, and location of the company all outrank salary offered as the major reasons engineering graduates select their jobs, according to college placement directors. A round-up report in *Machine Design* points out that long-range opportunities and assignments in keeping with their interests were the major reasons given by graduates for their decisions.

Cutting Labor Costs with Temporary Help

PARADOXICALLY, the present high cost of labor has opened a vast new reservoir of labor—part-time workers. Half of the total increase in employment in the past year was attributable to part-time workers, even though part-timers rarely represent more than 15 per cent of the total number employed. The demand for part-time labor began taking a dramatic new spurt late in 1955. By last summer, 8.5 million persons were working part-time; by the time of the Christmas shopping spree, the figure exceeded 15 million.

Much of the boom can be traced to a new kind of part-time labor: the temporary worker. Traditionally, the part-timer works a few hours regularly, every day of every week. But the temporary worker toils full-time for several days or several weeks or even several months, with no intention of working permanently. The temporary worker gives an employer new flexibility in tackling emergencies or brief, important jobs that demand a large, but short-term, labor force.

As the full-time labor supply has been depleted by the intense competition for workers, the part-time supply has opened vast new possibilities. It can relieve the production backlog—one Midwestern personnel manager says that he's put as many as three part-timers into one full-time job "just to get a few more man-hours of production"—and do it more cheaply than the full-time supply.

Only a third of all part-timers are

men. Except for a few white-collar workers picking up extra income on weekends and evenings, the huge bulk of the part-time labor supply is made up of persons who can't find permanent jobs; teachers, students, and others who have seasonal occupations; and millions of men and women who demand considerable free time every day or every week. Comparatively few part-timers are found in factories; most of them are qualified for office work—there are at least 600,000 office jobs open—and other skilled and unskilled labor.

How can you tap the part-time labor supply? All the familiar methods are available—want ads, state employment services, direct-mail advertising, even word-of-mouth advertising. But there's also another effective way: the temporary-help agency.

Ten years ago there were only a few of these agencies. Now there are 36 in New York alone and a half-dozen agencies have offices in two or more cities. Among the largest are Manpower, Inc., which has 93 offices in the U.S. and six in foreign countries, and Russell Kelly Office Service, which has offices in 55 cities.

Unlike ordinary employment agencies, the temporary-help firms find the worker for the job, not the job for the worker. They also charge the employer, not the employee, for the convenience of the service. Usually the charge is about 20 or 30 per cent of the worker's pay.

The part-time help is rented, not

hired out; it remains on the payroll of the temporary-help agency and is never transferred to the payroll of the client. If an office manager in Chicago, for instance, encounters a sudden need for three stenographers for three days, he can go to a temporary-help agency and rent them for, say, \$2.20 an hour for each girl. Like virtually all temporary-help employees, the stenos will be bonded for \$25,000 or \$50,000, but they'll also be under obligation not to go to work permanently for the client for at least 90 days after their temporary assignment is finished. They'll be paid the going rate for such work, say \$1.80 an hour, and the temporary-help agency will pocket the 40-cent difference as its fee.

But why should a business man pay a fee in order to rent part-time help when he can go out and hire it himself? Because he can save himself a lot of trouble and a little money. He can call a temporary-help agency at four o'clock and have all the help he needs the next morning without worrying about interviewing, advertising, training or the other chores of hiring and firing. He'll also save money in a score of ways, but principally in avoiding the costs of fringe benefits, the expense of hiring and firing, and the financial drain of wasted time on the job.

To many business men, these can be important savings. The U.S. Rubber Co. estimates that, by renting temporary help to get some jobs done, it saves 17 per cent over any other system, including hiring its own part-time or temporary help.

Here are some examples of how

companies use temporary workers:

- An insurance company in Milwaukee rents eight to 10 girls every January to help send out its annual report to a million policyholders.
- An automobile manufacturer in Michigan hires 151 girls for one weekend a month to map its parts schedule (a job which once took 50 full-timers more than two weeks a month); it estimates that it saves \$75,000 a year by renting help.
- Another manufacturer of automobiles changes the names on its multi-million-name mailing list periodically; it hires anywhere from three to 151 girls in a single day to help with the task.

Part-timers are frequently more productive than permanent help, for a variety of reasons. One is that temporary-help employees are older, on the average, than full-time help, because many employers are willing to take on older workers as long as they don't have to pay high premiums on insurance for them—and this cost is avoided by renting the help. Older workers often are more stable and reliable and work more conscientiously.

Despite the almost explosive expansion of the part-time labor market in recent months, the increasing demands of labor should give continued impetus to this new labor supply.

"There's going to be so much business in this field," says the head of one temporary-help agency, "that I'd open an office in every 10 blocks in Manhattan if I could."

■ William Barry Furlong,
NATION'S BUSINESS,
January, 1957, p. 367.

Is Your Communications Program Geared to Tomorrow?

IN HOW MANY COMPANIES does the job of securing good relations with employees, stockholders, and the public receive the same critical attention as the production and sale of products and services? Within a couple of decades, major changes will have taken place in the products industry makes, how it makes them, and their effect on our society. New machines and new methods are bringing new responses from the various groups—employees, stockholders, suppliers and plant communities—upon which the future of our business system depends.

Will management be prepared for these new challenges in human relations? Company managements must ask themselves: If business growth proceeds at the rate envisaged, can we in this organization be sure that employees, stockholders, suppliers, and plant communities have a full sense of sharing in the rewards of increased productivity and profit? And, conversely, is there increasing recognition that we need and must have contributions from these groups that will enable us to fulfill our obligations to them?

Perhaps what faces management is a fundamental new dimension to old problems. The business community will be called upon for increased demonstration of the vital role it plays in our society, and it will find that the ability to enunciate, explain, and persuade is even more required under

future conditions and pressures.

Thus, the present state of communications in industrial and public relations takes on new importance. Applying a yardstick, the chief executive officers of a business enterprise probably will require frank answers to such questions as these:

1. Have we in this company made the same progress in our human relationships that we have in engineering, production, and marketing goods and services?

2. How wide is the gap between our acknowledgment of the need for two-way communications with the groups vital to our welfare and the actual practice of these communications?

3. Have we achieved a measurable area of sympathetic understanding with these groups—an area which we may extend in the years ahead?

4. Is the impetus for our communication process coming from our highest management levels? Have we specifically determined where we aim to be within the predictable future?

5. Have we people within this company who are able to chart our program in human relationships step by step, year by year? If so, are we grooming men to replace them when they retire? Let us consider each of these questions in turn.

Ratio of Progress. Despite the substantial progress made in management's relationships with employees, stockholders, plant communities and

the public, few would say that this improvement has kept pace with ever-increasing production and expansion.

In many companies, too little awareness has been shown of the profound changes wrought in the national life by postwar prosperity. Rising living standards have brought new opportunities to underscore the contributions of business to the nation, to the community, and to the individual.

Talk vs. action. Frank examination of the gap between words and deeds is not the most pleasant of management functions. Yet this step, when it is undertaken by top management, can be both stimulating and constructive. Many believe in communications in industry, but more need to become aware of the rich rewards of communications that are always a part of, and interpret, a company's way of life.

Measurable results. The acid test of management achievement in communicating is the ability of management, employees, suppliers, and communities to work together for the success of a free and competitive enterprise in whose profits all have a stake. That ability may be gauged by opinion polls and other instruments, but in most cases it can be measured by searching self-examination at various levels in management.

Top management's role. When success has been achieved, in company after company it has been because chief executive officers have made effective communication a matter of vital personal concern and a vital operating procedure. Uninhibited leadership, inspiration, and executive determination in a company can come only from the principal officers of the firm.

The need for talent. Hugh C. Hoffman, vice president of Opinion Research Corporation, believes that within the next decade or two most companies will ask that communications budgets be given the same scrutiny as appropriations for new capital equipment. "As a result of the increase, integration, and focusing of company communications, the job of communications director will of necessity become a major one," he says.

Our really urgent need in the executive field will not be for communications technicians, but for men able to formulate and influence corporate policy; executives able to decide what should be said and when; men sensitive to developing trends and capable of stimulating research.

■ Robert E. Vivian. *THE COMMUNICATOR (Employee Labor Relations Committee, Inc., 33 East 48 Street, New York 17, N. Y.)* November 22, 1956, p. 1:4.

WISH YOU WERE HERE: Workers in an automated petroleum refinery in Great Britain have made a claim for "lonely money"—because in such an automatic factory, they say, they are not seeing enough of fellow workers.

—*Industrial Relations News* (230 West 41 Street, New York 36, N.Y.) 11/24/56

How to Control the "Rumor Factory"

IF YOUR COMPANY periodically finds itself in competition with a "rumor factory" going full blast among its plant employees, these suggestions for controlling and reducing the effects of rumors, made by Robert Hershey, personnel director, Bulova Watch Co., should prove helpful:

❖ Keep normal communication channels open—rumors flourish in the absence of reliable information.

❖ Don't use the public address system to debunk a rumor; this method seems to make the rumor better remembered than the refutation.

❖ Prevent idleness and monotony in the plant wherever possible.

❖ Debunk a rumor by presenting solid facts about the topic rather than by trying to disprove the logic of the rumor.

❖ Campaign against rumors and rumor-mongering.

❖ Educate supervisors in the dynamics of the rumor.

❖ Distract people's attention from the rumor area.

❖ Don't just deny a rumor and leave it at that.

❖ Interpret the rumor as a psychiatrist would a symptom. Ask yourself, "What anxiety or attitude does this rumor reflect?" Then try to relieve the tension by correcting the situation which caused it.

—Washington Report (U.S. Chamber of Commerce) 12/21/56



CARL THOMAS

"They're not fooling me. They've got some kind of warning system."

—Look Magazine

The Fine Art of Unpublic Relations

ONE OF THE MOST unusual "how-to" books to appear in recent months is a slim, attractively bound volume entitled, *How to Cover Up Your Mistakes: A Manual of Unpublic Relations*, by H. Harry Head.

The author, who is Director of Unpublic Relations at the Peter Piper Pickle Plant (Shreveport, Ark.), defines unpublic relations as "doing a lousy job and keeping it hushed up." He says he wrote the book in the hope that it will induce thousands of companies which badly need unpublicity to establish unpublic relations departments of their own.

Why unpublicity? Here's the way the author explains it: "It is no longer considered good business to goof and then philosophically accept the consequences. At Peter Piper, our motto is: *To err is human: to admit it, blind*. If our company pulls a boo-boo, we make certain that the public doesn't hear about it."

One of the first questions posed by the author is, "Who are your unpublics—i.e., what groups do you want to keep from finding out the wrong things about your company?" There are quite a number of these, and they are discussed in a long chapter entitled, "What They Don't Know Won't Hurt Them." Here are some of the section headings of that chapter: "Making the office grapevine work for you" (employees); "What's wrong with hoodwinking?" (customers); "Keeping them in the dark" (influential groups within the community); "The public be damned"

(public at large); and "All's fair in the market place" (the industry as a whole).

To give the reader some idea of how the author handles his subject matter, here is a brief passage from "Making the office grapevine work for you":

"The grapevine, as management knows, can be very troublesome. Because of leaks in top-level communications, employees—unless protected from themselves—can find out all sorts of things which will damage morale, slow down production, create union problems and, in general, harass and embarrass management. The technique which has worked for us at Peter Piper is to place several stooges around the plant (or, if you prefer, plant several stooges around the place) for the purpose of injecting our own material into the grapevine. For example, within five minutes after the superintendent of our gherkin division was canned, we started the rumor that he had resigned to accept a position of greater responsibility with one of our competitors. This simple stratagem kept the rest of the superintendents and plant foremen from feeling restive and insecure, with the result that there was no lag in production."

In coining the phrase, "The public be damned," William Vanderbilt was guilty of only one thing, says Mr. Head—candor. "If Vanderbilt had had a good u.p.r. man on his staff, his motto would have been: 'Keep the public informed.' Then he could

have followed the same course and had the public singing his praise."

Who should handle unpublicity? Mr. Head is emphatic in stating that unpublicity matters should not—in fact, cannot—be handled by a company's publicity department. The p.r. man and the u.p.r. man are opposite types, he asserts.

"The publicity man works chiefly through news releases, personal letters and telephone calls. His function is to get the greatest possible amount of favorable material about his company into communications media without paying the regular space or time rates charged for advertising. Essentially, he is asking favors, so he must persuade by the charm of his personality and the richness of his prose.

"The unpublicity man's job, on the other hand, is to keep unfavorable mention of his company and its key

men out of the communications channels. Essentially, then, he is issuing warnings. He persuades by making the other person feel that physical strength might become a vital factor in the latter stages of the interview.

"The u.p.r. man specializes in bringing pressure to bear. Not only will he cancel an advertising contract on the spot but, if provoked, he will arrange to have the offender's mortgage foreclosed. Never to my knowledge, however, has a u.p.r. man resorted to foul play, as Digby Doolittle, former publisher of the *Shreveport Gazette* and erstwhile critic of Peter Piper Pickles, charged the day before he mysteriously disappeared, a number of years ago."

■ James A. Ballew.

MANAGER'S MAGAZINE (Agency
Management Association)
Volume 31, No. 1, p. 3:2.

The Suggestion Box: Treasure Chest for Industry

A YEAR AGO, Cleveland's Thompson Products, Inc., manufacturer of aircraft parts, was losing \$43,000 a year because the belts on its high-speed polishing machines constantly frayed. While company engineers wrestled with the problem, machine operator Emmie Gabor announced via the company's suggestion box that a little nail lacquer on the edge of the belt made it work fine. Management found that an industrial lacquer worked even better—and gave Mrs. Gabor a \$6,592 suggestion award.

For useful contributions like this and a vast range of other ideas poured into U.S. suggestion boxes, employees of some 6,000 companies and government agencies will collect at least \$50 million in awards this year. What's more, the bulk of payments will be made by blue-chip firms who can afford full-time efficiency experts. Recently, for instance, the Firestone Tire & Rubber Co. paid \$400 to machinist Lewis Smith (for a method of rebuilding worn-out winding machines) that brought total

awards in Firestone's 38-year-old program to an even \$1 million. General Electric Co., which has paid out more than \$7 million in awards, is celebrating the golden anniversary of its program in Schenectady by replacing plant suggestion boxes with large gold-colored "ears," behind which are tape recorders to take down spoken suggestions. General Motors Corp. has paid \$19.7 million in awards, a figure topped only by the U.S. government; last year, Defense Department employees alone made 227,831 suggestions and collected more than \$2 million for the 64,052 which were approved.

National Cash Register Co. was one of the first firms to install suggestion boxes, in 1894. However, the idea goes back to the medieval Venetians, who aired their gripes and bright ideas by dropping notes through a slot in the wall of the Doge's palace.

The idea really took hold in the U.S. during World War II, when scarce material and manpower put a premium on production improvements. Employee suggestions saved the U.S. some 200 million man-hours a year during the war—in effect, adding 80,000 workers.

Without careful management—usually by a full-time administrator—the suggestion box can become a Pandora's box of troubles; indiscriminate awards can fan jealousy among employees, and cold, impersonal letters of rejection can stifle enthusiasm. Some signs of trouble are: (1) a rash of suggestion-box chestnuts, such as "Have the last man blow the whistle so nobody will be late to

work;" (2) ideas aimed more at boosting employee comfort than employee efficiency; (3) sheer flights of fancy: One airline employee suggested that all company planes carry detergents to dump into the clouds along their routes for sudsy stratospheric scrubdowns.

Many companies still doubt that suggestion programs are worth the trouble involved in running them. A St. Louis firm, planning to abandon a suggestion program it started "with great fanfare" eight years ago, reports that "we are now down to such genius-inspired ideas as where to put the towel rack in the men's washroom."

However, the National Association of Suggestion Systems (Chicago), which keeps more than 1,000 member organizations informed of new twists in running suggestion programs, figures that about 26 per cent of all employee suggestions make the grade. Furthermore, the NASS estimates that the suggestions recover at least 10 times the amount of award payments by cutting costs and saving man-hours through improved production methods. Quentin Groth, chief industrial engineer for the Axle Division of Cleveland's Eaton Manufacturing Co., explains it this way: "No one is closer to production problems than the workers—and we could never have enough methods engineers to study every machine and process in the plant."

For suggestions producing tangible improvements, most companies award a percentage (usually 10 per cent) of the annual savings. Jones & Laughlin paid \$15,000 last year to a mill

worker who designed a switching mechanism that saved a \$19 million investment in a new bar mill. Record award for a single idea: \$28,006, paid in 1948 by the Cleveland Graphite Bronze Co. to a furnace operator who suggested improvements in handling carbon cores.

Not all ideas have a calculable value—for example, suggestions for improving safety in a plant or smoothing customer relations in a department store. And no one can put a price tag on the indirect benefits of suggestion programs, which may encourage employee incentive, uncover

able men in the ranks, and provide an outlet for gripes. Such benefits can be indispensable in an era when management-labor communications are often confined to a one-way barrage of brochures or to negotiations across a bargaining table. "Our program makes a manager out of a janitor," says Allen Reiffman, who runs the suggestion program for Chicago's W. F. Hall Printing Co. "There is a direct line of communication from the man at the machine to the man at the top."

■ NEWSWEEK,
November 26, 1956,
p. 85:2.

Service Award Policies in 58 Companies

"YOU CAN'T BUY an employee's loyalty and good will with a \$10 pin or a \$50 watch. If you think you're giving something away when you make service awards, you had better quit." This statement from one of the 58 respondents to a recent Dartnell Corporation survey emphasizes management's awareness of the importance of recognizing an employee's years of service to the company.

Over 95 per cent of the companies participating in this survey have service award policies; the others usually have some other form of recognition, such as longer vacations or bonus increases. Over half the companies with established policies start giving service awards after five years of employment; 20 per cent begin after 10 years, and 18 per cent after 25 years. The rest start earlier—4 per cent after three years and 6 per cent at the end of only one year.

Service clubs are also growing in acceptance; 32 per cent of the companies report having some type, and over 60 per cent of those are company sponsored.

Most respondents indicated that service awards had a definite place in building good will and morale. Among the gifts best received by the employees themselves, most popular were wrist watches (in 35 per cent of the companies), pins (in 20 per cent), and monetary gifts (in 10 per cent).

How awards are presented may also make a difference in their value to employee morale. Almost half the companies present their awards at a banquet. Presentation is made in the department in 20 per cent of the companies, and at a luncheon in 12 per cent. Other occasions mentioned for presentations include company picnics and Christmas parties.

ALSO RECOMMENDED

Brief Summaries of Other Timely Articles

GENERAL

DO MERGERS KILL COMPETITION? By Ralph L. Nelson. *Challenge* (475 Fifth Avenue, New York 17, N. Y.), December, 1956. 20 cents. The current wave of merger activity, the third since the turn of the century, is not likely to affect the pattern of competition to a great extent, according to the author of this article. In support of his contention, he points out that at least 2,000 firms were swallowed up in mergers between 1899 and 1901; another 3,100 firms were absorbed during the 1927-29 peak; and only 1,200 companies disappeared between 1953 and 1955, many of them becoming parts of already large corporations.

PLANNED CREATIVITY PAYS OFF. *Nation's Business* (1615 H Street, N.W., Washington 6, D.C.), January, 1957. Reprints 15 cents. New ideas stimulated by a comprehensive program to develop and utilize employee creativity have resulted in improved products, methods and services at AC Spark Plug Co., according to this article. Begun three years ago, the successful project involves four basic steps: (1) measuring the creative ability of each employee through tests; (2) placing the creative employees where they will do the most good; (3) teaching employees to be more creative; and (4) removing any supervisory blocks to creativity.

ANOTHER BIG DECADE FOR CAPITAL GOODS. By Gilbert Burck and Sanford S. Parker. *Fortune* (9 Rockefeller Plaza, New York 20, N. Y.), December, 1956. Reprints 25 cents. The feast-and-famine cycles that have plagued the capital-goods market appear gradually to be giving way to a definite long-range stability, say the authors of this article, predicting that capital outlays will increase from the \$44.6 billion spent in 1956 to some \$62 billion in 1965. After citing some of the reasons for this expectation, they offer their estimates of capital spending in individual industries during the next decade.

SO YOU WANT TO INVEST ABROAD. By Alexander O. Stanley and Marion L. Weaver. *Dun's Review and Modern Industry* (99 Church Street, New York 8, N. Y.), December, 1956. 75 cents. The tables accompanying this article on foreign investment provide a company contemplating overseas manufacture with comparative facts and figures on basic investment factors in 46 key world markets. This guide to selecting a suitable investment location includes: amount of U.S. investment and loans in each country, national income, total number of manufacturing establishments, number of wage earners in manufacturing activities, various investment regulations, and tax regulations.

INDUSTRIAL RELATIONS

PERSONNEL'S INFLUENCE DIMINISHING? *Personnel Journal* (P.O. Box 239, Swarthmore, Penna.), December, 1956. 75 cents. Three points of view on the management status of personnel directors are presented in this symposium.

Thomas G. Spates, Professor Emeritus of Personnel Administration, Yale University, believes that the personnel profession can "regain some of the prestige it has lost" only by putting more emphasis on the importance of individuals. A

vice president of a large insurance company maintains that human problems are the province of everyone in an organization, not only of the personnel department. Finally, the employee relations director of a Canadian company contributes his belief that personnel officers should play more of a role in the broader activities of their companies.

MANPOWER RECRUITING KEEPS INDUSTRY HOPPING. By Frederick Borden. *Industrial Marketing* (200 East Illinois Street, Chicago 11, Ill.), December, 1956. 25 cents. Although campus interviewing is still the most widely utilized method of employment recruiting among large companies, they are putting an increasing amount of effort and money into advertising and promotion through newspapers and magazines, films and film strips, brochures, radio, television, and even billboard advertising. The author describes some of the ways in which these media are used by various companies.

CAN THE GAW CURE SEASONAL UNEMPLOYMENT? By Edwin B. George. *Dun's Review and Modern Industry* (99 Church Street, New York 8, N. Y.), December, 1956: 75 cents. Though the argument that a guaranteed annual wage would substantially reduce seasonal unemployment is perhaps more widely accepted than any other claim being made in its behalf, the author strongly believes that (1) most GAW target industries have no serious seasonal ir-

regularity; (2) the GAW could not reduce seasonal unemployment beyond the low levels which the industries themselves have already achieved; and (3) full-scale GAW plans would adversely restrict the mobility of our work-force. He offers some alternative methods as more effective solution to the problem.

LOOKING TOWARD AUTOMATION.

By Katharine A. Lembright. *National Safety News* (425 North Michigan Avenue, Chicago 11, Ill.), January, 1957. \$1.00. Although automation will mean fewer occupational injuries and illnesses, its impact on living and working habits may create emotional problems that could seriously affect employee health and efficiency, says the author. She discusses the major role that industrial medical departments can play in helping workers maintain emotional and physical well-being under these new conditions.

HOW TWO COMPANIES MEET THEIR NEEDS FOR CONTROL TECHNICIANS.

By Harry R. Karp, Harry Homewood and John J. Dwyer, Jr. *Control Engineering* (330 West 42 Street, New York 36, N. Y.), December, 1956. Reprints 25 cents. Increasingly complex instrument maintenance in our production plants has intensified the need for comprehensive training programs for control technicians, say the authors. In this article, they describe the highly successful training programs of two large companies (Carbide & Carbon Chemical Co. and Ford Motor Co.).

OFFICE MANAGEMENT

AUTOMATION: HOW TO ASSESS ITS PRACTICAL VALUE. By Robert H. Allen. *Office Executive* (132 West Chelton Avenue, Philadelphia 44, Penna.), January, 1957. 50 cents. Pointing out the importance of effective

techniques for measuring the desirability of electronic data-processing in a specific situation, the author describes a forms-system study which has been found practical in a variety of cases. Even if the study—which is built

around easily understood flow charts—indicates that automation is not feasible, he believes it can benefit a company by spotlighting system defects that can be eliminated through procedural changes.

SUPPLEMENTING ELECTRONIC EQUIPMENT WITH A MODERN COMMUNICATIONS SYSTEM. By Monroe M. Koontz. *N.A.C.A. Bulletin*, Section One (505 Park Avenue, New York 22, N. Y.), January, 1957. 75 cents. The potential benefits of rapid electronic data-processing will not be realized until faster methods of feeding data into computers and memory units are utilized, says the author. He proposes the use of television to eliminate the paperwork bottleneck by transmitting data instantaneously from scattered sources to a central electronic processing station.

ADVANTAGES OF CENTRALIZED FILING. By Dorothy S. Knight. *Office Executive* (132 West Cheltenham Avenue, Philadelphia 44, Penna.), January,

1957. 50 cents. Central records control can mean reduced cost of maintaining files, speedier transmittal of needed information, and lower turnover of records personnel, maintains the author. She describes the centralized system used successfully by her company (Lever Brothers Co.), stressing the importance of keeping file volume down by retiring inactive material to a warehouse storage center.

SIMPLIFIED STOREKEEPING FOR SMALLER ORGANIZATIONS. By Stanley H. Mansbridge. *Office Management* (212 Fifth Avenue, New York 10, N.Y.), January, 1957. 45 cents. For the small company that cannot afford expensive electronic methods in store-keeping and inventory control, the author outlines alternative procedures for simplifying and improving these functions. He describes some forms to facilitate accurate record-keeping and suggests that continuous stock-taking can eliminate the dislocation caused by a once-a-year inventory check.

PRODUCTION MANAGEMENT

THE PUSH-BUTTON WAREHOUSE. *Fortune* (9 Rockefeller Plaza, New York 20, N. Y.), December, 1956. \$1.25. Automated production lines have been turning out goods faster than antiquated warehouses can handle them, and to break the jam industrial engineers are now applying the automation principle to the warehouses themselves. Describing how a number of companies are speeding up their warehouse procedures with computer-controlled conveyors and other automatic devices, the author concludes that, despite the necessary changes in packing methods and the high cost of the equipment, push-button warehouses will bring substantial long-range savings.

THERE'S MONEY IN THAT SCRAP PILE. By H. B. Ferguson. *Purchasing* (205 East 42 Street, New York 17, N.Y.), December, 1956. \$1.00. Pointing out that scrap disposal is a frequently neglected source of profits, the author describes how his own company (Aeroquip Corp.) has realized maximum returns through a carefully planned disposal program. He deals with four major aspects of this program: (1) segregating the scrap into proper grades and classifying it to obtain the highest possible prices; (2) preparing the scrap for sale; (3) selling the scrap in the most advantageous market; and (4) establishing controls to make sure that all scrap is accounted for.

HOW TO GET MORE FOR YOUR POWER DOLLAR. By George M. Shuster. *Mill & Factory* (205 East 42 Street, New York 17, N. Y.), December, 1956. 50 cents. A careful review of a company's power consumption set-up will almost always reveal that a more efficient use of electricity can result in lower costs, says the author, and he describes a number of steps a company can take to fill its power needs for less money, including: (1) improving the power factor; (2) controlling peak power demands; and (3) switching to a different type of service contract.

PURCHASING'S BIG ROLE IN THE SMALL COMPANY. *Purchasing* (205 East 42 Street, New York 17, N. Y.), December, 1956. \$1.00. This special report contains five case studies showing how purchasing departments have con-

tributed effectively to the profitable operation of small companies in such ways as: (1) taking an active part in long-range planning; (2) achieving closer liaison with other departments; (3) developing a sound knowledge of engineering specifications; (4) cutting small-order costs; and (5) keeping good records.

1957 MARKETING AND PRODUCTS NUMBER. *Industrial Distribution* (330 West 42 Street, New York 36, N. Y.), December, 1956. 50 cents. Though intended primarily for industrial distributors, this comprehensive listing of industrial products and their manufacturers should provide a useful reference book for company purchasing departments, too. Featured is a section describing 140 new products put on the market during the past year.

MARKETING MANAGEMENT

HOW TO PROTECT YOUR TRADEMARK. By Edgar S. Bayol. *Dun's Review and Modern Industry* (99 Church Street, New York 8, N. Y.), December, 1956. 75 cents. A trademark is a fragile property that a company can only retain through continuous and proper use, the author of this article points out. He discusses ways and means of educating employees, distributors, and communications people on proper trademark usage and describes how his own company (Coca-Cola Co.) keeps accurate records of its trademark "policing" activities for possible use as court evidence.

HOW CAN MANUFACTURERS HELP DISTRIBUTORS MOST? *Industrial Marketing* (200 East Illinois Street, Chicago 11, Ill.), December, 1956. 25 cents. Asked this question in a recent survey, 45 industrial distributors stressed

four important ways in which manufacturers could provide them with sales assistance: (1) supplying better field men to train and assist distributor salesmen; (2) contributing more help with product demonstrations; (3) cooperating with distributors in tailoring advertising to local requirements; and (4) giving distributors a chance to sit in on the planning of long-range advertising and promotion campaigns.

HOW MUCH FOR ADVERTISING? By Daniel Seligman. *Fortune* (9 Rockefeller Plaza, New York 20, N. Y.), December, 1956. \$1.25. Although business men will spend about \$10 billion on advertising this year, they don't actually know whether their outlays are too much or too little, the author says, and attempts are now being made by many companies to put their advertising bud-

gets on a more realistic basis. Pointing out that the impact of advertising depends in large measure on the skill of the agency that conceives it, he includes case histories of how two large companies (Rival and Ford) conducted their search for the proper agency to handle their advertising.

METALWORKING'S GROWING MARKETS. *The Iron Age* (Chestnut and 56 Streets, Philadelphia 39, Penna.), Jan-

uary 3, 1957. Reprints gratis. A 32-page survey of the marketing outlook for metalworking industries in the coming year. In addition to reports on the market for particular metals, this section features articles on more general topics: the influences of our growing population on American markets, tips on selling to the government, and methods of using government statistics and sources of information in finding new markets.

FINANCIAL MANAGEMENT

WALL STREET'S INFLUENTIAL ANALYSTS. By Charles E. Silberman. *Fortune* (9 Rockefeller Plaza, New York 20, N. Y.), January, 1957. \$1.25. In recent years, security analysts have risen from relative obscurity to the position of being assiduously courted by large corporations, which are increasingly sensitive to stockholder opinion. Describing some outstanding analysts and their methods, the author concludes that they have had a healthy effect on Wall Street, despite the mediocrity of many in the profession.

RECENT DEVELOPMENTS IN THE TAXATION OF EXECUTIVE TALENT. By Leslie Mills. *Taxes* (4025 West Peterson Avenue, Chicago 30, Ill.), December, 1956. 60 cents. The combination of high tax rates and an aggressive tax administration has intensified the need for finding ways of adequately compensating essential executive talent, the author says. This article, which reviews such methods of remuneration as fringe benefits, split-dollar insurance, health and accident benefits, and future-service contracts, concentrates on a discussion of recent court decisions that affect the relative attractiveness of various types of stock-option plans.

ACCOUNTING TRENDS AND TECHNIQUES. American Institute of Accountants (270 Madison Avenue, New York 16, N.Y.). \$15.00. This 299-page annual survey analyzes in detail the financial reports of 600 typical industrial and commercial corporations. Accounting techniques employed by these companies are illustrated by examples taken directly from the reports, while significant accounting trends are presented in numerous comparative tabulations.

BUDGET PREPARATION FROM THE BOTTOM UP. By John R. Hennessy and E. I. Roberson. *N.A.C.A. Bulletin*, Section One (505 Park Avenue, New York 22, N. Y.), December, 1956. 75 cents. A comprehensive description of the successful techniques used by one company (Stromberg-Carlson Division, General Dynamics Corp.) in preparing its annual budget. The authors point out that, because responsibility for planning and control of operations is delegated to all levels of management at Stromberg-Carlson, budget standards are determined primarily at the supervisory level and then reviewed by higher management, thus assuring complete coordination in planning.

RESEARCH AND DEVELOPMENT

RESEARCH: RADAR FOR PROGRESSIVE MANAGEMENT. By Maurice Holland and Malcolm Ross. *Dun's Review and Modern Industry* (99 Church Street, New York 8, N.Y.), December, 1956. 75 cents. Although not every manufacturer can support a full-scale research laboratory, the authors suggest that nearly all can profit by keeping abreast of trends in research and their possible market repercussions. In this article, they describe how manufacturers can make the best use of the agencies and publications that are the most valuable sources of scientific and technological information for industry.

SETTING CRITERIA FOR R & D. By Albert H. Rubenstein. *Harvard Business Review* (Soldiers Field, Boston 63, Mass.), January-February, 1957. \$2.00. The increasing dependence of companies on their research and development laboratories has created a pressing need for "research on research" so that the R & D manager will have the information with which to work out

accurate procedures for controlling and evaluating research activities, says the author of this article. Asserting that standard control and evaluation procedures cannot be applied successfully to R & D, he outlines an approach which recognizes the unique requirements of the research function.

ENGINEER-WRITERS ARE MADE, NOT BORN. By Robert R. Rathbone. *Research & Engineering* (77 South Street, Stamford, Conn.), January, 1957. \$1.00. Confused and ungrammatical writing often makes the reading of important technical research reports a tedious chore for supervisors and department heads, says the author. Outlining a comprehensive program for helping engineers to increase the readability and clearness of their reports, he suggests (1) technical writing courses to be given on company time by a professional editor, a professor or an experienced consultant; (2) a manual to standardize the organization, presentation, and terminology of reports.

INSURANCE MANAGEMENT

DISPUTE OVER THE VARIABLE ANNUITY. By Leonard E. Morrissey. *Harvard Business Review* (Soldiers Field, Boston 63, Mass.), January-February, 1957. \$2.00. Does the variable annuity answer the need for protection against inflationary inroads on retirement income, or is it a risky venture that will result in public misunderstanding and burdensome government regulation of insurance companies? After presenting both sides of the controversy, the author concludes that, despite the impressiveness of some of the negative arguments, the variable annuity will give policyholders a higher rate of return on

savings and a greater opportunity to share in the economy's growth.

BUSINESS INTERRUPTION. By Robert M. Beatty. *The Weekly Underwriter* (116 John Street, New York 38, N.Y.), December 29, 1956. 25 cents. Pointing out that a prolonged break in business operations can be fatal to a company that has not adequately prepared itself to withstand the financial strain of such an emergency, the author describes some ways in which a risk manager can accurately estimate possible losses beforehand and take steps to minimize them.



Creativity in Industry: The Care & Feeding of New Ideas

■ *Lydia Strong*

JUST how important are new ideas in business?

In dollars-and-cents terms, nobody really knows—but the realization is growing among management men that company growth is almost always related, directly or indirectly, to innovation of some kind. Radio Corporation of America has estimated that four-fifths of its sales volume comes from products unknown to the market a decade ago; the growth of DuPont, according to president Crawford R. Greenewalt, has been “overwhelmingly the result of internal development through research.” Introduction of a single new drug, meticcorten, quintupled the profits of the Schering Corp. within a year. Some 35 per cent of the entire Gross National Product, it has been reliably estimated, is attributable to research and development within the past 15 years.

Yet, innovation does not and cannot end in the research laboratory. New methods must be developed to manufacture and package the new products. Costs must be continually reduced to meet competition. Imaginative new advertising and merchandising approaches are needed. Everywhere, new ideas are in demand to increase income and profit.

The tremendous growth of American industry has, indeed, been based from the start on new ideas and new products. But these were formerly brought in, more often than not, from the outside. Today the pace of competition and the growth of corporate resources have stimulated the widespread development of industry-sponsored research and development programs. Small wonder, then, that the interest in creativity is reaching the proportions of a craze.

What is this excitement really all about? Most of the current discussion in conferences, magazine articles, and seminars centers on two topics: the selection of creative people, and the operational technique known as brainstorming. So far, comparatively little attention has been given to the problem, perhaps more basic, of creating an organizational climate favorable to the production and the exploitation of new ideas.

"The scarcity isn't in ideas but in acceptance," reports one authority in the field. Another observes: "Many executives are not interested in becoming creative. What they want is a magic formula that will cause their *subordinates* to think creatively—within limits."

WHO CAN CREATE?

One reason for this "let George be creative" attitude may be the widespread misunderstanding of how creativity really works.

It is widely assumed, for example, that only special kinds of people can create: only geniuses, or only artists, or only scientists or engineers or copywriters. But most authorities who have investigated the question agree with Professor J. P. Guilford, past president of the American Psychological Association, that "creative acts can be expected of almost all individuals. Those persons who are recognized as creative merely have more of what all of us have." Dr. Guilford suggests four attributes—problem sensitivity, fluency, flexibility, and originality—as basic factors in imaginative thinking. These attributes exist to some degree in practically everybody.

Another popular theory holds that creativity, like intelligence, is inborn and unchangeable. The fact: While there are undoubtedly individual limits to creativity, most persons never come within shooting distance of these limits. The fact that creative *performance* can be sharply stepped up is demonstrated by the success of

all sorts of business devices for stimulating new ideas: suggestion plans, cost reduction and work-simplification programs, and, in a few companies, direct training for creativity.

A third assumption that limits the opportunity for the production of new ideas is that creativeness is essentially problem-solving. This is only part of the truth. The first creative step is not to solve a problem, but to see it. Fred Olsen, Vice President for Research of Olin Industries, said recently: "The essence of creativity lies in the recognition of the disturbing element. Until the irritant has been discovered, there is no beginning of any creative act."

The implication is clear: In a business where top management reserves the right to state problems, rank-and-file employees are barred from making what may be the most important possible contribution.

A fourth fallacy that often paralyzes creative thinking is the notion that the thing created must be somehow entirely new, unlike anything ever seen or imagined before. The truth is that every innovation—a new theory of wave propagation, a still life, or a jet engine design—is simply a new combination of already existing elements.

It is easier, of course, to say what creativity is *not* than to define it and show how it works. Nobody as yet knows enough about thought processes to be able to diagram them like an electronic circuit. Nevertheless, important facts have been discovered.

CREATIVE AND ANALYTIC THINKING

A good starting point is the distinction made by Professor John E. Arnold of M.I.T. between analytical and creative problems. An analytical problem, says Dr. Arnold, is one where all necessary conditions are stated and only one solution is possible—as for example a mathematical computation, or a murder mystery. An analytical problem can be solved by logic alone. A creative problem, on the other hand, is one that is open to a variety of solutions—*e.g.*, how to build a house, how to promote a product, how to organize a new subsidiary. Such a problem needs to be approached with flexibility and imagination. To solve it may require reaching into fields other than one's own for materials and analogies.

One reason specialists are often uninventive, Dr. Arnold notes, is that they are too deeply immersed in a single field. Another reason is that they know in advance that certain solutions won't work. A less sophisticated person, faced with the same problem and unaware of the possible objections to a given approach, goes right ahead and tries—and frequently finds a method for working the theoretically unworkable.

THE CREATIVE PROCESS

New things are created in two ways: by discovering a fact or a force and devising a use for it (as in the development of steam and of electricity), and by starting with a problem and devising a solution (as with the development of aviation). Outside of basic research, the problem-solving approach is the one most often used in industry.

Every student of creativity seems to formulate his own analysis of the pattern of problem-solving. The basic process is, however, to recognize and define the problem; to accumulate facts and associations and to decide whether these are relevant and adequate; to invent one or a series of possible solutions; to test and evaluate these solutions, choosing among them or combining them or giving them up and trying other approaches, and ending up with a tested, workable solution. A brilliant guess—or a lucky accident—can considerably shorten the process. But guesses are not always brilliant—and the first inspiration is not necessarily the best.

In practice, few creative activities, particularly in the field of development, follow an exact or simple sequence. While part of a problem is already solved, another aspect may still be in the period of search and discovery. In the development of a single small servomotor by one company, it is reported, 32,500 separate decisions were made. Even if many of these decisions were semi-automatic, others must have posed problems which necessitated a small-scale repetition of the entire creative process. In an advertising campaign, even after the theme has been originated and agreed on, the copy and layout for each advertisement constitute separate creative problems. Decisions are made also at each step of a cost reduction program, an executive development plan, or any

other complex business program. The principal decision and the subsidiary decisions are usually made by different persons—a fact which illustrates the need for creative ability at all levels.

IS THERE A CREATIVE PERSONALITY?

* Most of us think in clichés where personality is concerned, and this cliché thinking extends to the idea of creative personality. For many people, the image of Einstein walking abstractedly through the streets of Princeton with his tousled hair and knitted hat has become a symbol of creativity—but every old man in a knitted hat is not an Einstein. Professor Ross L. Mooney, of the Bureau of Educational Research of Ohio State University, says:

“Persons can be creative whether introverts or extroverts, naïve or sophisticated, impulsive or steady, recluses or active social participants. They can also be creative whether the medium they use is painting, writing, architecture, mathematics, administration, or child-rearing.”

And, it might be added, whether the uniform they wear is a lab coat, a mechanic's overalls, a tweed jacket and odd trousers, or a business suit.

There are, however, certain attributes which have been found favorable to creativity. Four have already been mentioned: sensitivity to problems, fluency of ideas, flexibility, and originality. Others are initiative, curiosity, unwillingness or inability to accept routine explanations, persistence, and the ability to tolerate uncertainty during the period of search for a solution. Not all creative persons display all these traits. Not all are, for that matter, equally fertile at each stage of the creative process.

Professor Morris I. Stein of the University of Chicago, who has been studying the personal traits and the organizational environment influencing creativity in industrial laboratories, notes that “different personality characteristics are associated with the various stages of the creative process,” so that while some individuals can fulfill the requirements for all stages, others may be proficient only in a single stage. Thus, “it may well be that one individual is an originator of ideas but a poor methodologist . . . A second person can elaborate the ideas of others and subject them to experimental test . . . a third may be proficient in observing the implications of

experimental results and in communicating them to others so that the creative product is brought out for the use of the community at large."

MOTIVATION

Just as creative personalities differ, so do their motivations. The most effective motivation, for those who possess it to any marked degree, is the sheer enjoyment of the problem-solving activity. This is probably present to some extent in every creative act. In the words of the British scientist and critic J. Bronowski:

"The need of the age gives its shape to scientific progress as a whole. But it is not the need of the age which gives the individual scientist his sense of pleasure and of adventure, and that excitement which keeps him working late into the night. . . . He is personally involved in his work, as the poet is in his, and as the artist is in the painting. Paints and painting too must have been made for useful ends; and language was developed, from whatever beginnings, for practical communication. Yet you cannot have a man handle paints or language or the symbolic concepts of physics, you cannot even have him stain a microscope slide, without instantly waking in him a pleasure in the very language, a sense of exploring his own activity. This sense lies at the heart of creation."

In his studies of scientists, Professor Stein has noted internal motivation of this kind; persons so motivated do not need as many external incentives as others, but they need freedom to operate. Even a man with a strong internal urge to creativity can be frustrated if he is not given enough scope, if his abilities are not fully utilized, or if he is saddled with inappropriate administrative duties.

But, Dr. Stein points out, there is also a large group of persons who are *potentially* creative; but need to be motivated from outside. They will create if by so doing they can earn material and social rewards; if standards are not set unrealistically high; if they are informed of problems on which work needs to be done; and if they can remove inner blocks to creativity.

Dr. Stein gave a group of research men a list of ten possible factors related to job activity and asked them which they considered

important. Here are the three they considered most important, in this order: the chance to acquire new abilities or knowledge; the chance to use their present abilities; and salary. Asked further what rewards they would choose for work well done, the men picked first a promotion; second, the opportunity for executive training; third, a substantial salary raise. Security, as exemplified by "guaranteeing your job for five more years," came in last on a list of 12 rewards.

WHAT PRICE PRESSURE?

At a meeting of the Industrial Research Council last year, participants were asked the most effective motivations for research. Overwhelmingly, the first choice went to adequate communication—i.e., keeping the researcher in close touch with company policies and problems, providing him with a complete understanding of his responsibilities, and so on. Application of direct pressure was considered a comparatively poor method. Yet "crash programs" have succeeded in science; as for fields other than science, the deadline is a pressure many creative people cannot afford to ignore.

There may be, as Jules D. Porsche of Armour and Company has suggested, "an inverse relationship between the scope of a creative work and the extent to which pressure will be effective . . . no amount or kind of outside pressure could have hurried Einstein into developing his insight into the relationship between mass and energy. On the other hand, it is possible to expedite the output of a writer or an artist, or a research scientist."

In advertising, a group of 78 leading copywriters and executives were queried concerning their creative processes* by Professor G. Herbert True of the University of Notre Dame. The overwhelming majority agree with these statements:

"Ideas become organized by continuous plugging and exerting effort."

"When you fail to solve problem by concentration, redefine problem and look for new relationships."

More than half also day-dream, or dream at night about the problem, and "major ideas keep coming." But only a minority feel

* "How to Be Creative," by G. Herbert True. *Printers' Ink*, January 4, 1957.

—as creative persons less plagued by pressure often feel—that they get their best ideas “when doing something unrelated to the problem.”

The fact is that the question of creativity in business relates to the organization as well as the individual. “Pressure” works in one firm but fails in another. Company A hires a ball of fire—who promptly cools off. Company B hires an average executive, whose abilities blossom out remarkably.

This does not mean that the abilities of the individual are unimportant. It does mean that the way the company handles the individual can make a big difference in his output of ideas.

In his study of organizational influences on the creativity of scientists, Professor Stein found that the motives and values of management are important. Is the laboratory set up for basic or for applied research? Does management want to originate all the problems, or does it want the scientists to work on problems they consider relevant? Either way may be the right one to satisfy the company's goals, but the decision should be made consciously.

In the present period of “creativity-itis,” Dr. Stein adds, laboratories are sometimes designed to impress visitors and the public. But if the needs of researchers are neglected in the plan, the new laboratory may fail to stimulate and in fact may even hamper creativity.

The system of rewards exerts great influence. Some companies reward a creative idea as such; others reward only those ideas which are seen as immediate money-makers. Oddly enough, he comments, this limitation inhibits the production of all ideas—including those that make money.

In laboratories established in connection with production, Dr. Stein found that ideas connected with production tended to be carried over into the administration of research: ideas like being in at a certain time, obeying strict orders, and so on. “The creative person tends to be non-authoritarian, democratic, and questioning of the status quo,” according to Dr. Stein. “If these attitudes and activities are suppressed in him in his role of an employee, the suppression may carry over to the scientific and professional zones.”

CAN CREATIVITY BE TESTED?

A key point in company policy is the method of selecting personnel. It is said that Thomas A. Edison had a rule-of-thumb test for young men seeking to work with him. He invited them to dinner, and if they salted their food before tasting it they weren't hired because, Edison reasoned, they did not possess sufficient curiosity.

A less mechanical criterion was described to a business group by Dr. L. L. Thurstone, of the University of North Carolina's Psychometric Laboratory. "When a graduate student wants a job in my laboratory I talk with him and, if it seems feasible, I propose something that is a little strange. Sometimes the student immediately shows by convincing logic that the idea is all wrong. I believe the more promising student seems a little intrigued. . . . He toys with the idea and tries to imagine what the world would be like if this were really so."

One organization, the A. C. Spark Plug Division of General Motors, has developed its own "Test of Creative Ability," designed to get an indication of the number and the uniqueness of ideas a person is likely to have. It consists of five parts: (1) listing possible consequences of ordinary happenings; (2) listing possible reasons for the truth of a series of unusual statements; (3) listing improvements that might be made in familiar appliances; (4) working out solutions to problem situations, and (5) listing as many uses as possible for common objects. The test is geared primarily to engineering, and no universal key to scoring has been worked out, since the company feels applicants' abilities can be judged only in relation to those of others who are working in the same field.

The Research Division of Armour and Co. has used a group of clinical psychological tests (such as the Rorschach, the Thematic Apperception Test, and sentence completion). This testing, combined with interviewers' judgments, resulted apparently in better selection and placement, but it did not provide any real measurement of creativity.

Two industry-oriented groups—the Industrial Research Institute

(New York) and the American Institute for Research (Pittsburgh), are trying to develop measuring sticks for creativity. Neither organization has a test ready now. Many personnel men feel that the most reliable test, though perhaps the most difficult to apply, is that of performance. In discussing the recruitment of advertising talent, Max Banzhaf, advertising director of the Armstrong Cork Co., laid stress on "original creative thought—work that the candidate has done *on his own initiative*," as well as on persistence, originality, adaptability, and a rising level of aspiration—that is, the undertaking of progressively more difficult creative tasks.

PREMIUMS ON CONFORMITY

But tests of creativity—whether reliable or otherwise—are only one of the criteria for hiring. Some of the other criteria may have the reverse effect of barring the most creative persons, or of reducing the level of creativity in the company.

Personality has become an increasingly important consideration. The director of a large research laboratory was quoted recently as being "unenthusiastic about nonconformist types." Another company passed up a capable inventor whose personality tests showed he preferred to work on his own and at his own rate of speed, and that he was "hostile to authoritarian superiors." One effect of many personality tests used in industry—to the extent that they have an effect—is to filter out persons capable of seeing and calling attention to problems—persons who tend to be skeptical of the status quo. But these are the very qualities on which spontaneous creativity depends. As Fred Olsen of Olin Industries put it: "The thick-skinned people do no creative thinking. To them everything is understood; they have no problems."

Not only do some "personality tests" screen out creative people, but the very fact that a company gives such tests (the direction and purpose of which are clearly seen by many applicants) implies an atmosphere which favors conformity and which discourages employees from showing too much awareness of the problems of the company.

Hiring tests are not the only barriers to creativity. Within any company or organizational structure, there is resistance to change

because it threatens an existing situation with which some people are satisfied. Even though the whole reason for a program of innovation is to maintain or improve the company's competitive position, research men often find it hard to sell the boss on a new idea.

Restraints may come from inside as well as outside the so-called "creative" department. Powerful consultants and department heads who consciously or unconsciously set all the problems and make all the important decisions constitute an inhibiting influence. One executive told Dr. Shepard: "I want my men to argue until the decision is made, but after that I expect them to sell it whether or not they agree." Later, one of his subordinates commented: "I've never known him to want an argument at any time."

An over-competitive atmosphere may impede creativity by hindering the exchange of ideas and the stimulation this provides.

Both overbearing and over-submissive superiors "will effectively discourage the creative abilities of their subordinates," Jules D. Porsche has observed. The ideal superior seems to be one who both stimulates and encourages a flow of new ideas, even though he does not feel constrained to accept them uncritically.

CREATIVE AND UNCREATIVE TEAMS

In a study of factors influencing the productivity of engineering teams, M.I.T. researchers obtained team reactions to a picture of a group meeting. The picture showed several men around a table—one talking, one looking out of the window, one with an arm around another's shoulder. This was shown separately to two teams, one of which was considered on the basis of performance more creative than the other, and each team was asked to make up a story about the picture.

The more creative team did a great deal of lively talking, in which people freely interrupted each other with new ideas. They considered a number of alternatives, finally decided that the group in the picture was thrashing out some specific difficulties. The less creative team spoke hesitatingly, depended more on their leader, saw less in the picture, were more careful in stating what they saw. They tentatively suggested that a departing member of the group was getting a farewell gift.

THE GROUP APPROACH

Consideration of group creativity is particularly pertinent because the group or team approach is becoming a pattern in industry. In a recent large survey of industrial research laboratories,* three out of four professional workers were found to be members of teams which worked under specific leaders or directors, had specific responsibilities, and engaged in specific projects. Practically all the large companies covered were using some form of team organization with part or all of their research personnel.

In advertising, in promotion, in production, in office management, more and more problems are being tackled by some sort of team: a project committee, an executive committee, even a brainstorming session. The widespread switch to an over-all marketing concept places emphasis on the team approach to the goal of selling products rather than on the separate specialties of advertising, selling, market research, and so on. Group problem-solving is used extensively in company-wide programs of cost reduction and work simplification.

Not every combination of two or more people doing a job can realistically be called a team. A department does not become a team simply by being called into a meeting and given a pep talk by its supervisor. A research man who works alone but calls in technical experts as he needs them is not, essentially, using a team approach. Even when all the inspirational euphemisms are set aside, however, it remains true that a good share of the developmental work of American business is being done by teams.

The entire team may work closely together all the time. Or, the members may get together and discuss progress, make decisions on approaches, then disband to complete assignments—in which case the detailed work of development is done by the members working individually, under the guidance of the team.

All of which leads to the controversial question: Can a team—as a team—create? Is the team product different from, or superior to, what could have been achieved by some of the same persons working individually?

* *Team Research*, by David B. Hertz and Albert H. Rubenstein, Dept. of Industrial Engineering, Columbia University, June, 1953.

Extreme individualists point to the massive achievements of scientists working alone. They point out further than every new thought expressed in a group meeting is the product of an individual mind. Also, they point out if the group is ill-constituted or ill-conducted, the result may be that very antithesis of creative achievement, a pussy-footing compromise designed to meet the objections of the least capable members.

Proponents of teamwork argue, on the other hand, that every new idea conceived by an individual is in reality a synthesis of previous ideas and discoveries; therefore creation, even by a person working alone, is essentially a social activity. The group process at its best, and for people who are temperamentally suited to it, speeds up social interaction, provides varying and contrasting points of view, and stimulates the production of ideas.

Furthermore, the act of creation is not completed by formulating a brilliant hypothesis. The hypothesis requires critical examination, testing, and development—which can under some circumstances be done more efficiently by a team.

Teamwork was used to speed the development of radar and of the atom bomb. Earl P. Stevenson, chairman of the board of Arthur D. Little Co., a firm known for its practice of team invention, has stated: "The quickening translation of new scientific knowledge into terms of useful device is largely due to the development of a system for utilizing the resources of science—a system of teamwork among scientists, engineers, and manufacturers."

As to creative writing, *Paradise Lost* was not written by a team. But teams have certainly written novels, movie scripts, plays, and perhaps—who knows?—even advertising copy.

A group cannot, obviously, confer on its members greater technical or intellectual abilities than they already possess. It probably cannot increase innate creative ability. But it can, for some persons at least, stimulate the creative process and step up the level of performance.

BRAINSTORMING

Brainstorming is a special—and limited—team approach which is currently enjoying a tremendous vogue in industry. Most business men have heard of it and a great many have by this time actually

participated in a session. Brainstorming has been used by the U.S. armed forces, by General Motors, by General Electric, Sylvania, DuPont, the Ethyl Corporation, and many other industrial giants. One enterprising promoter (possibly as the result of a brainstorming session of his own!) has come up with a \$25 brainstorm kit, complete with a schoolroom bell, charts, script and manual, and reprints of instructive literature.

A brainstorming team need not be a regularly constituted team at all. It can be a group of any eight to 12 people gathered together to attack a problem. As practiced at Batten, Barton, Durstine, and Osborn, the New York advertising agency which makes most consistent use of the technique, brainstorming has four basic rules: (1) Don't criticize ("killer" phrases like "that won't work" are taboo); (2) welcome wild ideas; (3) strive for quantity, and (4) combine and improve on others' ideas. A typical session runs for three active minutes after a preliminary warm-up; then comes a coffee break or lunch break, followed by another or several more brainstorm sessions. It's not at all unusual to obtain 70 or 80 ideas in a single three-minute session. The ideas may be turned over for evaluation to a committee, or to the person who proposed the problem. If a few are usable, or if several can be combined into a single workable solution, this may be more than could have been accomplished otherwise. Brainstorming seems to work particularly well for public relations, advertising, and promotion, but it has been used for new product development and production too.

A reverse method of brainstorming—choosing a particular product or plan, maintaining that it is all wrong and offering alternative solutions, was credited with saving the Hotpoint Division of General Electric \$196,000 when the plant superintendent and two foremen attacked a plan for a \$200,000 conveyor system, and worked out an alternative plan that cost \$4,000.

One of the principal values of brainstorming, according to Harold B. Schmidhauser, director of AMA's Executive Action course, is therapeutic. "A brisk brainstorm session can give an executive broader vision, can help him see and teach new things. It can show him that others have ideas, and that there's more than one way to solve a problem." M.I.T.'s Dr. Arnold also feels brainstorming is "a form of group therapy." He recommends extending the tech-

nique both to larger and smaller groups and suggests that an individual can even hold a brainstorming session with himself by temporarily dropping critical standards and thinking up as many alternative solutions to a problem as possible.

The principal criticism of brainstorming comes from persons who, like advertising executive Wilferd E. Peterson, fear that "the trend in brainstorming is toward the superficial and mechanical. It is often a surface approach." Others have argued that brainstorming techniques are becoming "an opiate" and "a crutch" that can cause creative abilities to atrophy. Dr. Philip R. Marvin, manager of AMA's Research and Development Division, feels that brainstorming is helpful as a stimulant, but that the ideas produced are likely to be superficial. Therefore, brainstorming would be dangerous if accepted as a substitute for all other forms of creative effort. Furthermore, he warns, participants in brainstorming can function effectively only if barriers to creative thinking—such as fear, conventional judgments, and the desire to conform—are overcome.

CREATIVITY TRAINING

A relatively small number of companies, and a few colleges, offer specific training in creativity. Many of these are in the science field: the Creative Engineering course at M.I.T., the Creative Engineering Program at General Electric, the creativity training for production and development people at the AC Spark Plug Division of General Motors. IBM, Ford, Dow Chemical, and Standard Pressed Steel are among those offering creativity training to some employees.

Most companies that have evaluated results feel that training definitely steps up the flow of ideas. At AC Spark Plug, a 41 per cent increase in number of responses to test problems was registered by one group of trainees. Encouragingly, those who profited most were exactly those who had scored lowest at the outset. For these men especially, the course removed blocks to creative thinking, gave opportunity for practice, and—perhaps most important—provided the incentive of knowing that management was keenly interested in new ideas. As an additional dividend, contact with trainees improves management's knowledge of their abilities and helps place them in appropriate jobs.

Not every creative thinking program is so labeled. The Hotpoint

Division of General Electric has a "Keymen" program which includes selected foremen and supervisors from all departments. The Keymen meet regularly to discuss company problems. Their suggestions save Hotpoint "millions of dollars a year," the company says. Many other firms have similarly oriented programs.

CREATIVE ADMINISTRATION

Unquestionably, great gains are made by any form of training or organization which taps the creative abilities of some employees. Still greater gains can be made by companies that manage to increase, even to a small degree, the creative contribution of *all* employees.

At an AMA seminar, Dr. A. K. Brintnall, manager of training and personnel research for the B. F. Goodrich Company, described a plant known to have excellent performance caused by a high degree of creativity at all levels.

"The plant reflected the personality of an unusual plant manager," Dr. Brintnall said. "It was run in terms of his belief in freedom." Lines of authority were less sharply drawn than in other plants, job definitions were less rigid, and every worker, including the workers on the assembly line, felt that his job had more scope than similar jobs in other plants.

Providing a favorable general climate for creativity is not a simple undertaking. Such a climate requires, as has already been suggested, greater freedom, less emphasis on structure and on conformity. Frederic D. Randall of the Eli Lilly Company has pointed out: "The stimulants for efficiency in the routine and mechanical activities of individuals are quite different from the stimulants for creativity in their mental activities."

Creativity flourishes in organizations where information is freely available without "going through channels"; where workers are not too chained to routine to be able to stop and think at least occasionally; where controls are not rigid; where an occasional failure is considered the price of progress; and where, above all, new ideas are accepted and rewarded. The acceptance and appreciation of a new idea is in itself a creative act.

Some of these requirements run counter to cherished conception

of order and efficiency; some of them would, in many companies, necessitate some disruption of a smoothly running but rigid organization, to enable it to move forward more freely. All changes of this type involve both risk and hard, often uncongenial, labor. An atmosphere of completely free-wheeling creativity would, in fact, disrupt most existing businesses. Neither production nor personnel could stand up to the pressure of constant and unpredictable change.

Furthermore, not all new ideas have survival value. The majority of new products fail, either because they are inadequate or because they are backed by inadequate methods and resources.

But old products and old methods inevitably yield to new ones; and the companies that produce the best new ideas are those most likely to prosper—if they remain within the limits of their organizational and financial capabilities. At any given point in its history, a company must decide, not whether it needs creativity (it does) but how much creativity it can afford.

Why People Work: An Attitude Survey

MANY EMPLOYEES are satisfied with jobs that offer less freedom and opportunity for advancement than they really want, judging from the results of a recent nationwide survey conducted by the University of Michigan Survey Research Center. Of the 1,000 persons surveyed, 82 per cent said that, all things considered, they were satisfied with their jobs—yet only 28 per cent thought that they had a “fairly good” or “very good” chance of getting ahead.

In this connection, it is interesting that only 65 per cent of the respondents considered themselves hard workers. The rest said they worked “not very hard” or “steady, but not very hard.” And of those who worked hard, only 10 per cent did so because they liked their jobs. (Other reasons: required by the job—35 per cent; money—30 per cent; “nervousness”—13 per cent.)

The biggest cause of job dissatisfaction was inadequate salaries, (27 per cent), followed by work pressure (12 per cent) and “the hours” (9 per cent). Dissatisfaction with the boss was listed by 5 per cent.

Despite these indications that job satisfaction was not widespread among respondents, 80 per cent of them said that they would continue to work, even if they didn't have to.

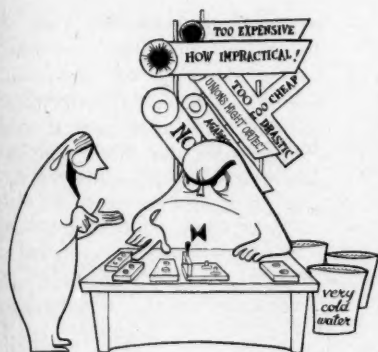
If they didn't work, said 40 per cent of the respondents, they'd miss social contacts more than anything else. Only 15 per cent would miss the kind of work they do; 9 per cent would miss the regular routine; and 1 per cent “wouldn't miss a thing.”

Ten Ways to Petrify Progress

EXECUTIVES OF AMERICA, AWAKE! All around you the status quo is in deadly peril. In laboratories, factories, and offices, wild-eyed innovators are busy turning out a steady stream of dangerous new ideas. Under cover of cutting costs and building profits, they are stealthily undermining the established order, The Way Things Have Always Been Done.

True, you can't stop progress—but in your own organization you can slow it down to a barely perceptible crawl. The strategy is clear: stop new ideas before they start. Applied ruthlessly, the tactics outlined below will enable you to stamp out the insidious contagion of creativity.

Swing into action, executives, before your most cherished assumptions and time-honored routines go the way of the pterodactyl and the dinosaur!



Shoot first—ask questions later.

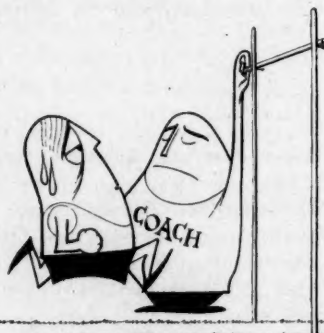
Catch new ideas when they're in the vulnerable embryonic stage. A swift, snappy objection will bring the idea to a standstill. You can then pick it up, examine it closely, and remove the vital spark.

Keep subordinates in their places.

A job for everybody, and everybody hard at his job. Keep them in tight compartments and their ideas—if any—will die for lack of air.



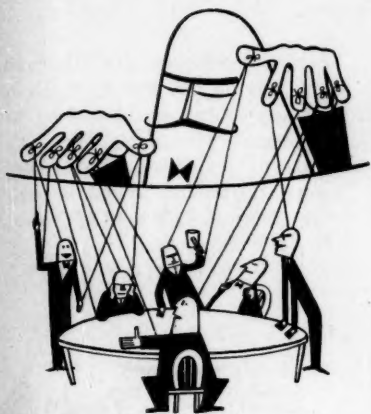
Point out the microscopic flaws. So the new patent package for persimmons could earn an additional \$5 million for the company? Maybe so—but be sure to point out that the patent will expire in 17 years. Then too, the persimmon trees may become diseased, or the persimmon producers may demand a larger share of the profits. If you can conjure up enough difficulties, the project may well be postponed.



Set standards impossibly high. A plan to cut office costs 3 per cent? Too piffling even for discussion. The only plan you will entertain is one that will cut all costs at least 30 per cent, hike prices, and insure increasing dividends for the next 25 years.

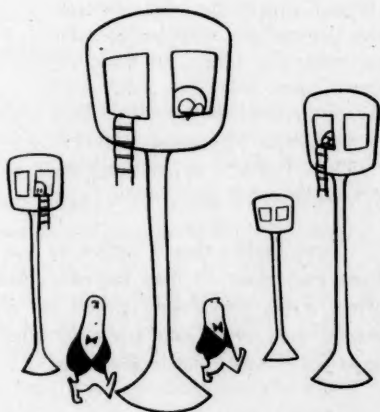


Follow accepted practices. Has the proposed approach ever been tried before in your industry? If not, it can't be much good. Better stick to the tried-and-true: follow the lead of your industrial confreres (even if they're heading straight for oblivion).

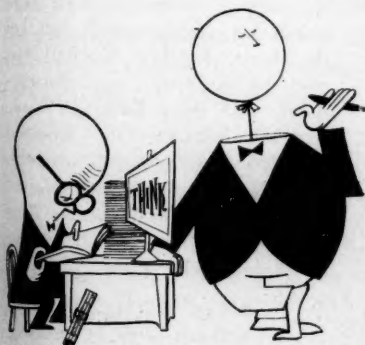


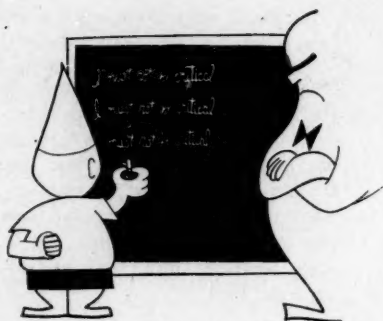
Make all the decisions—nobody else knows how. You may, however, put your subordinates through the motions of a democratic discussion. After a few practice sessions they will get the point, and you may then rely on them not to voice a single unwanted or unexpected idea.

Keep your job to yourself. Don't discuss your job; don't tolerate questions; above all, don't divulge your problems. It's true that others might be able to help you, but can you trust their motives? No, far better to struggle on in isolation. Your tower may not be pure ivory, but at least it's your own.



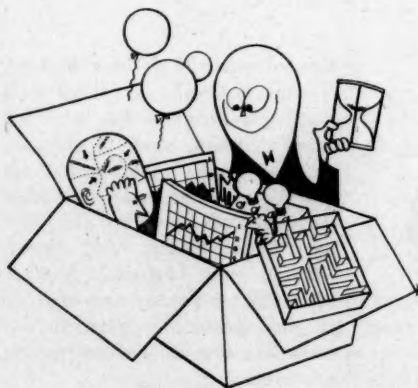
Hire an expert to do your thinking. Nobody can really be trusted with a problem except a man who has made a lifetime study of the subject and knows exactly what *not* to do. And what could your other employees offer—aside from common sense, insight, and experience in your business? Another advantage of having one man do all your thinking is that you can easily fire him if he starts getting too original.



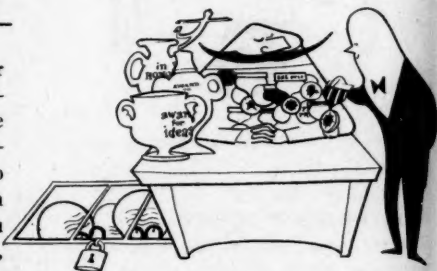


Snatch all the credit. Despite your severest squelching, some insensitive persons may continue to come up with new ideas. In these extreme cases, your best policy is to accept the ideas, but proclaim them as your own. The chances are you won't be bothered again—at least, not by the same individual.

These tactics should suffice to bar unwelcome ideas from your door. It may happen—Heaven forbid—that after having completely stifled all urges to originality among your staff, you are confronted with a pressing need for a new idea. In that case . . .



Permit no criticism. It's bald-faced treachery to question so much as a single routine established by the Founders—who have long since gone to their reward. (If they were still around, *they'd* be making changes—but that, of course, is a different matter.)



Buy a creativity kit. A brainstorming package—what could be more thoroughly inspirational? Set up the charts, distribute the balloons, read out the script, start the egg-timer, and stand back! In three frenzied minutes, the inspired participants should pop up with 209 gleaming new ideas, one of which will be the answer to your problem! (If not, you must have the wrong problem.)

- Text by LYDIA STRONG
- Drawings by AL HORMEL

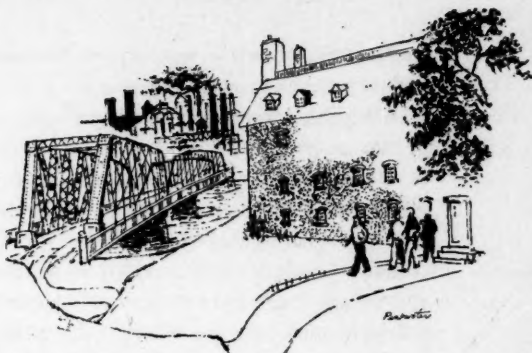
Educating Tomorrow's Executives

The Case for the Liberal Arts

■ **Gilbert W. Chapman**

President

The Yale & Towne Manufacturing Company



MORE AND MORE BUSINESS EXECUTIVES are becoming acutely aware that the problem of education does not belong only to the educators—that the responsibility for good education is ours as much as it is theirs. In these days of revolutionary scientific developments, American industry is under a constant, pressing need for scientists and engineers capable of maintaining, directing, and advancing our technology. We are also confronted by a growing need for more executive leaders, not only to make certain that we have men capable of handling the complex affairs of today's modern corporations, but to insure the long-range continuity of management. The future security of this country and the world rests upon the ability of our educational system to develop well-trained and analytical minds that can appraise the problems that surround them.

If our country is to continue to grow and prosper materially and spiritually, the educator and the industrialist must understand each other's problems and be aware of their common goals. America's role of leadership in world affairs rests upon our political stability, educational growth, and industrial democracy. Whether the entire

This article is based upon an address delivered before a recent Goddard College seminar. The author, who is a member of the Yale Alumni Board and the Board of Directors of *The Saturday Review*, is also a trustee of the National Planning Association and Chairman of the National Book Committee, Inc.

noncommunist world will live or die depends upon the success or failure of American capitalism.

American corporation executives carry a large share of the burden of this responsibility, since the effects of their decisions reach far beyond immediate corporate goals and reflect significantly in world affairs. Our government now recognizes that how and what we advertise abroad may either advance or retard our foreign policy. American industry has invested large sums in overseas plants that employ great numbers of citizens of other countries. We buy and sell goods and services all over the globe, and we function as the nuclear center of the entire free world. Thus, what we do or fail to do has world significance.

QUALIFICATIONS FOR BUSINESS LEADERSHIP

To meet the challenge of industry's new responsibility in the world requires a cultivation of mind and a broad outlook that must come from the educational institutions of our land. As business operations have grown in complexity, it has become increasingly apparent that the problems of an executive become less specialized and more general as he advances toward the top. The specialist cannot function effectively at the top level of management if all he brings to it is his specialty. At that level, the daily problems call for broad general knowledge, open-mindedness, understanding of human nature, insight into human frailties, fairness of mind, and clarity of thought—all these in addition to the ordinary knowledge of a complex business situation.

Of course, the specialist is not excluded from a career in top management, but a specialty that may thrive in the laboratory or research center is not in itself sufficient qualification for top executive responsibility. Let the specialist extend his knowledge into the broader fields of general learning and he, too, can move ahead—perhaps even more rapidly than others.

The qualifications needed for leadership in industry are developed largely through a liberal arts education. The phrase "liberal arts" refers to the arts appropriate to a free man—originally grammar, rhetoric, logic, music, arithmetic, geometry, and astronomy. The purpose of these studies was not to fill the human mind with facts, but to train the student to use his mind, to have intellectual curios-

ity, taste, moral strength, and imagination. The scope of liberal arts has been broadened to include many other disciplines, among them literature, languages, and fine arts. For most students, none of these has a specific vocational value, but all of them contribute to the enrichment of intellect and judgment.

This enrichment is not produced by highly specialized training. Here the mind is too often isolated and cannot cope with the strangeness of the great outside world, with its social and economic differences, its changing languages, and its shifting customs. We need people who can understand the responsibility of American industry and the influences that radiate from it. This kind of leadership requires a sympathetic knowledge of the people of other countries, as well as our own, and familiarity with the history of all peoples, their modes, and their customs. The preparation for this type of leadership must begin in education.

Education must also prepare future industrial leaders for the complexities they will encounter in this vitally expanding American economy. The executive of today and the future will have to make, or participate in the making of, decisions involving an almost limitless number of considerations. He will have to think clearly and systematically, using all the available information to its fullest extent. The corporation can teach the trainee the facts of credit and finance, but it has neither the time or the facilities to teach him how to attack problems logically. If colleges and universities will give courses in general economics to all undergraduates who aspire to careers in industry, so much to the good. But it is more important for educators to train minds to think in an organized fashion. Many young people coming out of college cannot understand the simplest accounting terms. Again, we do not necessarily need courses in reading balance sheets, but certainly we do need some form of intellectual training that will make it possible for the normally intelligent person to understand a balance sheet or, for that matter, anything else that he reads.

Management is deeply involved in the art of communication, and success and profit often depend upon it. Eventually, all decisions must be communicated, either orally or in writing. The ability to express oneself and the ability to understand what is expressed are absolute prerequisites for effective executive performance. The

man who cannot express himself will not be successful, for the men at the top must be able to communicate the essential meaning of business decisions and policies to all levels.

Dean Warren, of the Columbia University Law School, reports that the inability of graduate students to read and write is a disease of epidemic proportions. This problem may have its roots in some distortion of modern teaching principles on the primary and secondary levels. Perhaps parents are equally at fault for failing to bring books into the home and to expose their children to the advantages of the ability to read, understand, and enjoy a book.

Very few adults have been exposed to reading training beyond the elementary school level. As a result, most business men read at a seventh-grader's pace. In a number of instances, corporations have found this a serious detriment to the efficiency of their executive organization. General Motors Institute, which has been offering courses in accelerated reading since 1952, reports an average increase of 75 per cent in the reading efficiency of its students—an indication of the potential ability now being wasted. Without the ability to read intelligently and write coherently, the young man is not a prospect for executive responsibility.

Much of this need can be satisfied by exposing more students to the great literature of our language. Although there are few better paths to a good command of English than by the reading of good books, many young people are glaringly unfamiliar with them. The other values which one derives from books are, together with the love of music and the arts, part of the development of a good mind and a good spirit. The humanistic influence of great art is one of the most positive forces in the development of a well-balanced individual who can assume responsibility in a free society.

GROUP RELATIONSHIPS AND THE HUMANITIES

Corporate responsibilities are most often met and carried out in group relationships. Today, the "management team" is a necessity; no one man is capable of determining the facts and making all the decisions in the complex industrial economy in which we live and work. To work with one's peers, to have their respect, and to have the ability to abide by the decisions of the recognized authority—these are the qualities essential to success. Warmth of feeling

and a proper humility, which must always underlie relationships within a group, are enriched by and perhaps derived from exposure to the humanities at the formative age.

The levels of management must be manned by people who understand others. This is the key to leadership. How well the executive understands human nature, inside and outside his own company, will be the ultimate measure of his capacity for leadership. He will learn nothing about this in the laboratory; he will find no blueprint of it on the drawing board. His understanding can only come from living and learning—that is, from experience.

Education, and only education, can start the process of bringing this understanding to a person. Some of it, perhaps, will come from the study of psychology; some of it from the inspiration of great artists and writers; some of it from a study of history, which can arouse a deep feeling of respect and humility. The sciences will bring to the young man a discipline of mind, a respect for the truth, a desire for the facts that will stand him in good stead throughout his business career.

GENERAL EDUCATION FOR THE SPECIALIST

This is not to say that specialized training should be curtailed in favor of the liberal arts. It does indicate, however, a need for more general education for our specialists and a new, strong emphasis on the liberal arts as a preparation for careers in executive management. Our focus has been sharply drawn to technical training by what seems to be an unsatisfied need for applied scientists and engineers. There should be an equally sharp focus directed to general education so that young men and women will be encouraged to know that this, too, is a road to achievement in industry, and in any other field of endeavor.

The shortage of engineers and scientists in the United States is not necessarily so acute as the statistics seem to indicate. Our problem may in large part be one of effective utilization, rather than quantity. Some companies, for example, are placing the most highly trained scientific and engineering personnel in the center of a technical group, the other members of which are not graduate specialists. Around each key technical person, these companies have put factory-trained or laboratory-trained technicians, with the

engineer or scientist serving as group director. In time, the technician learns to do the work previously done by an engineer. This system has successfully increased the effectiveness of engineering staffs without increasing their numbers.

Many scientists and engineers are assigned to responsibilities beneath the level of their training. Some are doing jobs to which factory-trained personnel can be assigned. In a recently published Purdue University survey, for example, 60 per cent of the engineers included reported that only half or less than half of their effective potential was being used in their jobs. A national audit of graduate engineers employed in industry might well indicate that one of the major causes of the shortage of engineers is the fact that the highly developed skills of our engineers are not being utilized to the fullest degree. Such an audit might also be most valuable in showing the feasibility of using less highly trained personnel for administrative and paper work, as well as for marginal scientific jobs.

Last spring, a report from the California Institute of Technology urged the development of better communication skills for scientists and engineers to improve communication between technical and nontechnical groups. More efficient communication would obviously achieve greater output from our scientific personnel. This skill does not ordinarily develop in a specialist's training, and the lack of it points again to the need for general education for the specialist.

EDUCATING TOMORROW'S LEADERS

There is no reason to fear that we will be left behind in the race for scientific supremacy. No nation has shown a greater genius than we have for technical achievement, and the evidence that our technical capabilities are as rich as ever is everywhere around us. The most pressing need in industry is for men with a well-balanced education. Many institutions of learning realize this need and have revised their curricula so that preparation for engineering and scientific degrees now includes some liberal arts courses. The task ahead is to get other colleges and universities to follow suit. This is made difficult, not only by the constant clamor for more specialists, but by the fact that many educators feel that education in the liberal arts makes a fuller and happier personal life but has little practical value for the world at large.

Actually, however, the men who go through the process of higher education and learn how to lead full and happy lives are exactly the ones best qualified as leaders to carry on the responsibilities of the Atomic Age. What the world needs, and what American business needs, is a steady stream of creative men with a broad knowledge and a capacity for independent thinking. We need men who pursue ideas, who will seek to solve problems, although they may have nothing to do with the immediate business problems before them—men whose thought processes do not end with the business day but who, through their education, have learned that one of the greatest joys in life is to be able to think for oneself.

Clerical Pay Rates: The Upward Trend Continues

CLERICAL PAY INCREASES are continuing to outpace rises in the cost of living, judging from a recent survey of almost 500 companies employing over 85,000 clerical workers. Results of this survey, conducted by the Commerce and Industry Association of New York, indicate that the weighted average of the median weekly salaries for 62 office occupations studied was \$65.09 in 1956—a 5.3 per cent increase from the previous year, when the average was \$61.84. During the same period, the Consumer Price Index rose 2.4 per cent throughout the nation and 2.9 per cent in New York City, the area in which the annual survey is conducted.

By way of comparison, average weekly earnings of production workers in manufacturing rose 3.5 per cent in New York City (from \$73.36 to \$75.94) and 4.5 per cent nationally (from \$78.50 to \$82.01) during the same period.

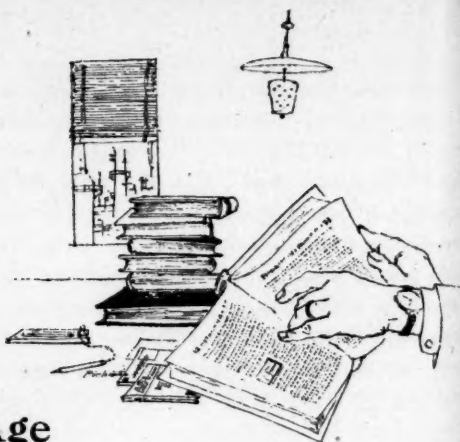
Pointing out that a hallmark of sound wage and salary administration is the maintenance of appropriate pay differentials among jobs requiring varying degrees of skill, knowledge, responsibility, etc., the Association notes that the companies studied evidence little or no compression of differentials in their salary structure. In fact, when the 62 jobs were divided into quartiles on the basis of their median salaries, there was a bigger percentage increase in the salaries of the jobs in the highest quartile (10.2 per cent) than of those in the lowest (9.9 per cent).

The survey also indicates that union efforts to organize office workers have met with little over-all success, when union membership is compared with the total "market." In 1955, 11 per cent of the workers covered by the survey were unionized; in 1956, 12 per cent were union members. The average weekly salary of unionized office workers was about 70 cents higher than the average for nonunion employees in the same positions.

Industrial Libraries Come of Age

■ **Samuel Sass**

*Librarian, The William Stanley Library
The General Electric Co., Pittsfield, Mass.*



TO THE THREE BASIC NEEDS of modern industry—men, materials and machines—has been added a fourth: information. In an era characterized by rapid advances in the field of science and technology, as well as in managerial techniques, the need for information on latest developments has become essential for business organizations that want to maintain leadership in their fields of operation. Two relatively recent phenomena reflect this need for information: the growing interest shown by management in the improvement of reading skill, and the growth of industrial libraries or information centers.

The fact that so many industrial firms have been willing to invest considerable sums in maintaining libraries and even, in the case of the industrial giants, systems consisting of several libraries, is in itself proof that libraries have assumed an important place in the industrial world.

Recruiting literature distributed by larger firms to potential technical employees is placing increasing emphasis on library facilities. In a booklet intended specifically for Ph.D.'s, for example, the General Electric Co. states, "At the various laboratories throughout the company, well-stocked libraries provide access to scientific

journals, and to the books and abstracts which are so important to the scientist." Similarly, the Dow Corning Corporation recently used full-page ads to describe their new library at Midland, Michigan. The scientists and engineers who visit college campuses for the purpose of recruiting scientific and engineering personnel for their firms have learned that one of the questions frequently asked by the prospective recruit is, "What kind of library facilities do you have for your research personnel?"

THE NEED FOR INFORMATION

What prompts the dollar-conscious industrial world to spend its money on books and libraries? The answer lies in the simple fact that, for modern industry to operate, technical information of great variety is essential. Despite the elaborate computers and other electronic devices that have recently become available for the use of scientists and engineers, the basic source of information, other than original experimentation, is still the printed word. It is the job of the industrial librarian to acquire and organize books, periodicals, pamphlets, and government documents in the fields of interest to his organization, just as the college librarian does for his college or the public librarian for the municipality he serves.

In addition to assisting the scientist and engineer, the industrial library has much to offer to specialists in other areas. It can supply the marketing research people, for example, with the latest statistics that they need. It can supply the manufacturing departments with the latest published information on manufacturing methods and time-study techniques. No matter what specific industrial function comes to mind, sooner or later the library can be called on to supply a fact or a figure that will save someone's time or will result in an improvement in operation.

LIBRARIES IN INDUSTRY

Although there is a similarity between industrial libraries and their public or college counterparts, there is one significant difference. College or public libraries maintain collections of varying size but, in general, provide information or reading material only when asked for it. The industrial librarian, in order to make himself most useful to his company, has found it necessary to play an

active role. He provides information when asked, but, knowing the interests of his company, he also channels relevant information to the people concerned as soon as he becomes aware of it.

Well-run industrial libraries are, therefore, not only collections of reference sources, but also intelligence units. Since current periodicals are the chief sources of up-to-date scientific and technical information, those received in the library are perused for articles of particular interest. These are then called to the attention of personnel concerned, either directly by telephone or memorandum or by a listing of such articles in a bulletin, which is circulated regularly to the entire technical and managerial staff.

In view of the tremendous amount of literature that is being published, this library service is of considerable help, especially to the scientist and engineer. Even if he can find time to read all the journals in his own field of specialization (no small feat!), it is practically impossible for him to read all the journals in adjacent fields, although these may contain papers of great interest to him. For example, an engineer working in the field of electrical insulation may read a number of electrical engineering journals, but he would miss much useful information if he did not also know what chemistry and physics journals were publishing on that subject. Similarly, the chemist or physicist working in electrical insulation would miss much if he didn't know what was being published in electrical engineering journals.

This perusal of current journals has proved its usefulness to the point where many industrial libraries have subject specialists on their staffs who make abstracts of articles of interest. The time-saving feature of this procedure is obvious. Instead of a dozen chemists, for example, reading the same paper, one reads it and provides the others with the essential data it contains. Of course, anyone who, after reading the abstract, still wishes to see the complete paper can obtain it from the library.

Closely associated with the industrial library's function of keeping scientists and engineers informed of pertinent material in current publications is its role in the literature search. When a research project is initiated, a thorough search of the literature reveals what has already been done and thus avoids costly and unnecessary duplication of effort. The amount of active assistance provided by the

library in such a search will vary with the preference of the scientists concerned. Some, who intend to do their own searching, expect the library to provide the sources only. In general, however, the scientist in industry wants more from his library than that. He ordinarily expects at least a bibliography from which he can select the items he thinks are worth reading. In libraries that have specialists on their staffs, the bibliography can be elaborated to include abstracts, or it can even be the basis of an evaluative report, giving the scientist a summary of the information on the specific subject involved. Whatever the degree of assistance rendered, this function is one of the major reasons for the library's existence.

ESTABLISHING A LIBRARY

Since a major requirement of an efficient industrial library is that it must be designed specifically for the needs of the organization it is to serve, only the general principles involved in establishing a library can be outlined.

The first requirement is, of course, to obtain a qualified librarian. Much has been said and written about the shortage of scientists and engineers, but, although little publicized, there is just as serious a shortage of librarians who have the necessary background in science and technology. One reason for this shortage is the expansion of libraries of all kinds, with the resulting need for additional personnel. The acute shortage of qualified industrial librarians is aggravated further, however, because most librarians have backgrounds in the humanities and are not prepared to work with literature in the physical sciences and engineering. The reference tools and publications in specialized fields have become so complex and numerous that only a properly trained person can choose intelligently among them, selecting those that will prove most necessary and useful to his organization.

For two reasons, the librarian should be selected before the library is established. First, he can avoid the possibility of wasting money on unnecessary or inferior material. Second, no matter how good a library collection may be, its potential usefulness will not be realized unless it is organized in a logical fashion, so that material can be located with a minimum of waste motion. The best collection will be of little use unless it is adequately classified and

catalogued and unless it is in the hands of someone who knows how to extract needed information in the most expeditious manner.

The literature sources to be acquired will depend, of course, on local needs. In addition to a sound collection of general reference books, every library should contain authoritative books and periodicals dealing with the specific products manufactured and the sciences that are basic to their understanding. In addition, the library should contain publications on the materials and processes the plant uses in making those products. Besides material dealing strictly with the scientific and technical aspects of the plant, the library should contain recent publications on other essential plant activities, such as purchasing, accounting, employee and community relations, maintenance, and so forth. The only limit to the scope of this list is the actual need of the particular organization involved.

Once the company's personnel become aware of the fact that there exists a convenient information unit prepared to supply authoritative information quickly, the demand from the various areas will indicate how much emphasis should be placed on any one subject. As the librarian becomes intimately acquainted with his company, he will be able to plan his activities so that the best use will be made of the services the library can offer.

THE LIBRARY'S PLACE IN THE ORGANIZATION

The success of the library operation will depend in large measure on its management support. The adequacy of the support is reflected in four basic factors: the place of the library in the organizational structure, its physical facilities, size of staff, and budget.

The library should be a distinct organizational entity, not a mere appendage to some other service unit. It should report directly to an executive with sufficient authority to make necessary policy decisions. To get the most out of its library, a company must be willing to give it adequate recognition to enhance its prestige in the eyes of potential library users and thereby encourage its use.

Closely associated with the question of recognition is the physical location of the library. A library relegated to some unused stock-room corner already has two strikes against it, because the location in itself is an indication to company personnel that management does not rate library service too highly. Without adequate space and at-

tractive location, a library can be handicapped to the point of ineffectiveness. "Attractive," of course, does not necessarily mean ornate or fancy; even the most utilitarian library layout can be made attractive if the space and location are reasonably adequate.

The size of staff and budget will vary, naturally, with the size of the parent organization. A survey made in 1946 showed that a majority of libraries represented in the Science-Technology Division of the Special Libraries Association are operated by one professionally trained person and a clerical assistant. Many have staffs of four or five, and a few have 20 or more. The same survey indicates that libraries set up to serve research laboratories have, on the average, one staff member for each 20 to 30 professional research workers. Another study indicates that, for a laboratory employing about 300 technical persons, the average library consists of a librarian and four assistants. A company just establishing a library would be best advised to start with a librarian and a clerical assistant, expanding the staff from this minimum as need dictates.

Similar advice might be given with regard to budget. A minimum budget suggested by the Science-Technology Division of the Special Libraries Association for establishing "a small library service" is approximately \$10,000. This includes equipment, books, periodicals, and incidentals, but does not include salaries or overhead. The suggested annual budget, again excluding salaries and overhead, is about \$3,000. These amounts apply to a small library in a relatively restricted subject field. As in the case of staff requirements, the figures will vary widely among different libraries, depending on the amount and kinds of service that the library is expected to perform.

GETTING THE MOST FROM THE LIBRARY

As is true of any industrial facility, the greatest return will be obtained from an investment in a library if fullest use is made of its services. Such use is possible only if there is free two-way communication between the librarian and management. In order to disseminate information effectively, the librarian must have the means of knowing what's going on in his company in areas where he can make a contribution. Management should make it easy for the librarian to know what projects are in progress, so that he can be prepared to supply necessary material in connection with them.

For this reason, many organizations ask the librarian to sit in on planning meetings.

Such cooperation, which is vital in connection with research and development programs, is also important in other areas. For example, if a department is planning a training course in time-study methods, the librarian will not be in a position to provide needed reading matter unless he has been informed how many will be taking the course and what the required reading material will be.

The range of interests in the modern industrial plant is so broad that maintaining a collection that will provide information to all areas is difficult under any circumstances. The library can make a major contribution to the organization only if effective two-way communication with management is maintained.

With such cooperation, the library has become an integral part of many organizations. As a source of the literature search, as a means of keeping informed of current developments, or as a place for obtaining answers to the myriad factual questions that constantly arise in a research organization, industrial libraries are paying their way and rapidly becoming an essential feature of the industrial world.

Wanted: Help in Retirement Planning

FEW EMPLOYEES have made adequate preparations for their retirement, and most would appreciate some guidance from management, judging from a recent survey taken among pensioners and employees approaching retirement age by Bell Telephone Co. of Pennsylvania. Here are some of the key findings, reported in *Labor Policy and Practice* (Bureau of National Affairs, Inc.), based on nearly 1,200 replies:

Definite plans for retirement have been made by only a few employees, and less than one-third of pensioners had definite plans when they retired. Three out of five employees and 55 per cent of pensioners favor company aid in planning for retirement; only 3 per cent of employees and 12 per cent of pensioners think that such help is not a good idea.

According to the respondents, aspects of retirement that should be covered in a counseling program include, in order of importance: financial planning, how to occupy time, where to live, personal health, and living arrangements.

The preferred method for getting information to employees is written communications. A substantial number of employees, though, expressed a desire for individual and/or group discussions, while a few said that lectures on certain topics by outside specialists might be desirable.

SURVEY OF BOOKS FOR EXECUTIVES

OVER MY SHOULDER: A Reminiscence. By Clarence B. Randall. Little, Brown and Company, Boston, Mass., 1956. 248 pages. \$3.50.

*Reviewed by George Corless**

Though Mr. Randall, former president and retired chairman of Inland Steel, says that he is just "reminiscing for fun," this book might well be subtitled "The growth and development of an executive." All students of management will be intrigued with this "depth interview" with one of the outstanding executives of our time. Mr. Randall lays his record on the line from his first yell to his retirement hobby—bird watching.

It must be admitted that Mr. Randall was, fortunate in the people who molded his formative years. His mother was a "one-woman social agency." Several of his teachers at the Wyoming Seminary and at Harvard were outstanding scholars. His Uncle Will taught him practical law. General Dugan taught him self-discipline, as well as how to ride a horse. Later, at Inland Steel, P. D. Block and Dave Thompson pushed him "off the deep end" into responsibility.

As an up-and-coming young lawyer, Mr. Randall was mentioned to Inland Steel to be considered for

the job of mine manager. Researchers in the early identification of management potential and executive selection will be impressed with the efficiency of his pre-employment interview. The president's instructions to his executive assistant were:

[Don't] select a technically trained man, for if you do he will probably stick to his specialty. This job has so many phases that no man can be trained for all of them. That's what young lawyers are taught to do, tackle new subjects all the time. If I were you, I would hire a young lawyer who is practicing law for an iron-ore company in the Lake Superior district."

In an interview that lasted less than five minutes, Mr. Randall was told, "The only question to talk about is whether you want the job." To test his desire for the job still further, Inland began by paying him \$3,000 a year less than the salary he had been led to expect. (The company made up the difference later.)

These reminiscences are full of suggestions that should guide the development of future executives. Those who believe that a liberal arts education and proficiency in public speaking afford the best training for an executive will find much support for their arguments in Mr. Randall's story. And his attitude toward his own future will be stimulating to those oldsters who do not relish mandatory retirement. In retirement, he says he has recaptured control of

* Regional Director, Institute of International Education, Houston, Texas.

his life. He still craves "new experiences, new challenges, new undertakings from which ultimately to form new memories."

This reviewer hopes to be around when the sequel to this book is written. It should make interesting reading.

Briefer Book Notes

(Please order books directly from publishers)

GENERAL

BUSINESS CYCLES: *Their Nature, Cause and Control.* By James Arthur Estey. Prentice-Hall, Inc., Englewood Cliffs, N. J., 1956. 497 pages. \$6.00. This textbook combines in one volume a description of cyclical behavior, a survey of business cycle theories, and an analysis of proposed methods of control. In this third edition, the historical and descriptive materials have been brought up to date and new sections added on national income indicators, the multiplier-accelerator interaction, forecasting, and built-in stabilizers.

THE ART OF PROBLEM SOLVING: *How to Improve Your Methods.* By Edward Hodnett. Harper & Brothers, New York, 1955. 202 pages. \$3.50. An exposition of the general principles underlying problem solving, considered both as science and as art, and their applications to personal, business, and professional situations.

ECONOMIC COMMENTARIES. Dennis H. Robertson. Staples Press Limited, London, England. 174 pages. \$3.75. (Distributed in the U.S. by John de Graff, Inc., 31 East 10 Street, New York 3, N. Y.) The essays contained in this volume represent the author's lectures and writings since 1952, some of which have not previously been published. In Part I of the collection, he comments on various theoretical problems discussed in recent economic literature. The essays in Part II deal with topics of more general interest.

NATIONAL INCOME VISUALIZED: *A Graphic Portrayal of How Economic Activity Is Measured.* By Arthur O. Dahlberg. Columbia University Press, New York, 1956. 117 pages. \$3.50. According to its author, this study aims to overcome the limitations of verbal techniques in describing economic processes and to develop a set of visual techniques as an "auxiliary language." By means of diagrams and pictures, the concepts employed in national income accounting and the basic economic processes underlying them are explained in such a way as to make them more readily intelligible to the business man and others concerned with the use of economic data.

LEGAL ASPECTS OF BUSINESS ADMINISTRATION. By Dow Votaw. Prentice-Hall, Inc., Englewood Cliffs, N. J. 1956. 808 pages. \$9.00. This book is an outgrowth of the author's conclusion that the usual compartmentalized method of presenting business law materials is generally unsatisfactory. Substituting for this approach a discussion of legal problems as they arise in the natural course of business events, he has organized his book under

four main heads: a general outline of the nature and purpose of law, legal procedure, and the law of contracts; legal problems connected with organizing a business; the law in relation to the various aspects of operating a business; and problems of termination.

BUSINESS ACTION IN A CHANGING WORLD. Edited by Henry C. Thole and Charles C. Gibbons. Public Administration Service, 1313 East 60 Street, Chicago 37, Ill. 1956. 319 pages. \$5.00. A collection of essays reprinted from various sources and dealing with the general topic of the survival and growth of the individual firm in a dynamic economy. Among the problems discussed are the changes facing the manager of tomorrow; methods of adjusting to these changes; management action in specific areas such as industrial research, marketing, and productivity; and the guaranteed annual wage and business stabilization.

MANAGEMENT KNOW-HOW—USA: 11th Annual Management Engineering Conference Proceedings. Society for Advancement of Management, 74 Fifth Avenue, New York 11, N. Y. 1956. 216 pages. \$5.00. The proceedings of a conference sponsored jointly by the Society for Advancement of Management and the Management Division of the American Society of Mechanical Engineers. Among the topics discussed are the principles and applications of operations research; materials handling; equipment selection; maintenance standards; information flow analysis; work measurement; automation and cost and quality control.

PUBLIC RELATIONS HANDBOOK. Edited by John Cameron Aspley and L. F. Van Houten. The Dartnell Corporation, 4660 Ravenswood Avenue, Chicago 40, Ill. 1956. 1005 pages. \$12.50. Though designed primarily as an aid for medium-sized companies in setting up a public relations department, this manual covers all aspects of the public relations function and cites the experiences of leading companies, both large and small, in carrying out an effective public relations program. It includes a list of public relations consultants and a bibliography of articles and books in this field.

OFFICE MANAGEMENT

OFFICE MANAGEMENT. By Charles B. Hicks and Irene Place. Allyn and Bacon, Inc., 70 Fifth Avenue, New York, N. Y., 1956. 548 pages. \$8.65. A comprehensive account of the principles and practices of office administration. Major emphasis is placed on work simplification through the application of office engineering techniques. The discussion of office methods analysis preparatory to electronic data processing should be of special value to office managers planning mechanization.

APPRAISING THE ECONOMICS OF ELECTRONIC COMPUTERS. By Frank Wallace. Controllershship Foundation, Inc., 2 Park Avenue, New York 16, N. Y. 1956. 106 pages. \$4.00. A systematic inventory of the procedures to be followed in determining office equipment requirements, estimating the cost of computer installations, selecting and training electronics personnel, and scheduling computer operations. Appendices include a review of the basic concepts of computers, a listing of computers commercially available, and a brief explanation of Operations Research.

BUSINESS ELECTRONICS REFERENCE GUIDE: Volume 3. Edited by Herbert F. Klingman. Controllership Foundation, Inc., 2 Park Avenue, New York 16, N. Y. 1956. \$6.00. This manual, the third in the Foundation's series on "Electronics in Business," presents comprehensive listings of company installations and applications of electronic computers; equipment and services available on a commercial basis; conferences, seminars, and training programs scheduled by universities and professional societies; and published materials on electronic computers. References given in the earlier volumes of the series are brought up to date, and additional information is provided on computers and data-processing systems.

A SURVEY OF DOMESTIC ELECTRONIC DIGITAL COMPUTING SYSTEMS. By Martin H. Weik. Office of Technical Services, U.S. Department of Commerce, 1955. 272 pages. \$4.75. A reprint of an original report, sponsored by the Ballistics Research Laboratories at Aberdeen Proving Ground, covering the engineering characteristics, logical features, operating experiences, cost factors, and personnel requirements of 84 digital electronic computing systems. Included also are an analysis of trends in the computer field and a glossary of computer engineering and programming terminology.

SUCCESSFUL OFFICE MANUALS: How Companies in Various Lines of Business Are Improving the Office Manual. Edited by F. C. Minaker. The Dartnell Corporation, 4660 Ravenswood Avenue, Chicago 40, Ill. 1956. 50 pages. \$8.75. A practical guide to planning, producing, and revising all types of standardized office instructions. Based on a survey of more than 100 companies, the report affords a comprehensive view of current forms and procedures in office instruction and provides a number of illustrative charts, checklists, instruction sheets, and other exhibits.

PROCEEDINGS OF THE 1955 ANNUAL CONFERENCE OF THE LIFE OFFICE MANAGEMENT ASSOCIATION. Life Office Management Association, 110 East 42 Street, New York 17, N. Y. 1956. 474 pages. \$5.00. Included in these proceedings are papers on management philosophy, cost analysis as an aid to management, and the principles of management training as applied to office personnel; a seminar on industrial insurance; and round tables on various aspects of insurance company operations.

MARKETING MANAGEMENT

READINGS IN MARKET RESEARCH: A Selection of Papers by British Authors. The British Market Research Bureau Limited, 47 Upper Grosvenor Street, London, W.1, England. 1956. 235 pages. \$5.00. This compilation includes an extended introduction by the editors outlining the development of market research in Britain over the past 25 years, as well as a number of articles on such aspects of market research as sampling methods, interviewing, coding, survey techniques, the Gallup Poll, and BBC audience research.

CHANGING PATTERNS IN RETAILING: Readings on Current Trends. By John W. Wingate and Arnold Corbin. Richard D. Irwin, Inc., Homewood, Ill. 1956. 393 pages. \$6.00. The articles and speeches in this collection,

representing recent contributions to the literature on retailing, are grouped under the following topics: retail trade—the over-all picture; consumer trends; retail institutions; store location; buying and selling; store organization; operating policies and procedures; and personnel and human relations.

GRAPHIS ANNUAL '56/57 OF INTERNATIONAL ADVERTISING ART. Edited by Walter Herdeg and Charles Rosner. Amstutz & Herdeg, Graphis Press, Zurich, Switzerland. 209 pages. \$12.50. (Distributed in the U.S. by Hastings House, Publishers, Inc., 41 East 50 Street, New York 22, N. Y.) This fifth edition of an annual review of advertising art contains reproductions of outstanding designs of the year, with introduction and explanatory text in English, German, and French, and a listing of the artists, advertising agencies, sponsoring companies, and printers that are represented in the collection.

SELLING COLOR TO PEOPLE. By Faber Birren. University Books, Inc., 404 Fourth Avenue, New York 16, N. Y. 1956. 219 pages. \$7.50. Emphasizing the commercial applications of color rather than color theory, this book is a practical guide to the uses of color in merchandising, styling, advertising, packaging, displays, interiors, and color television. Recent findings in market research, as well as a number of examples and illustrations drawn from business experience with color, underscore the author's points.

PRODUCT PLANNING: Basis for Profits and Growth. Edited by William M. Jacobs and George W. Starcher. Product Planning Associates, Box 711, Stamford, Conn. 1956. 51 pages. \$5.00. A useful manual for companies planning to introduce new product lines. On the basis of information compiled from firms with experience in product planning as well as from published sources, a number of suggestions are offered on how to set objectives in product development, how to find ideas for new products, how to organize the planning function within the firm, and how to get help from outside sources.

FINANCIAL MANAGEMENT

NEW MONEY FOR BUSINESS: Techniques of Long-Term Corporate Financing. By George J. Leness *et al.* McGraw-Hill Book Company, Inc., New York, 1956. 153 pages. \$15.00. This study, the second of the McGraw-Hill *Consultant Reports on Current Business Problems*, is designed for a specific corporate audience—executives responsible for capital-raising decisions in medium-sized companies. While emphasizing long-term financing through the sale of securities, the report covers all the major means of raising capital, including bank loans and sales-and-leasebacks, as well as the legal and marketing factors involved in disposing of securities.

THE ENCYCLOPEDIA OF TAX PROCEDURES. Edited by J. K. Lasser and J. K. Lasser Tax Institute. Prentice-Hall, Inc., Englewood Cliffs, N. J. 1956. 1632 pages. \$29.50. A comprehensive survey of tax problems and procedures designed as an aid to counselors in this field. The volume comprises a series of essays contributed by specialists and grouped under the

following heads: planning an organization and operation; reorganizing the business; business accounting; business expenses and losses; business management problems; dividends and other relations with stockholders; making sales and exchanges; making particular types of sales or purchases; and individual transactions.

THE TAX ON ACCUMULATED EARNINGS. By Robert S. Holzman. The Ronald Press Company, 15 East 26 Street, New York 10, N. Y., 1956. 136 pages. \$10.00. An analysis of how the federal tax law affects the accumulated earnings of corporations, what judicial precedents have been established justifying the retention of earnings, and how management can avoid costly mistakes in handling earnings and dividends.

MANAGEMENT ACCOUNTING: Text and Cases. By Robert N. Anthony. Richard D. Irwin, Inc., Homewood, Ill., 1956. 511 pages. \$7.80. Combining text material with business case studies, this volume emphasizes the use of accounting information in solving various types of management problems, including budgeting, pricing, introducing or dropping a product line, and re-equipment decisions.

STATISTICAL SAMPLING FOR AUDITORS AND ACCOUNTANTS. By Lawrence L. Vance and John Neter. John Wiley & Sons, Inc., New York. 1956. 310 pages. \$9.00. Stressing the practical rather than the theoretical aspects of statistics and designed for readers with little background in the subject, this text provides a comprehensive treatment of the concepts and techniques of statistical sampling as applied to auditing and accounting.

PRICE LEVEL CHANGES AND FINANCIAL STATEMENTS: Case Studies of Four Companies. By Ralph Coughenour Jones. American Accounting Association, Ohio State University, Columbus 10, Ohio. 1955. 179 pages. \$3.00. A presentation of techniques for measuring the effects of inflation on firms of different types and sizes. Based on an analysis of the financial records of four companies—New York Telephone, Armstrong Cork, The Reece Corporation, and Sargent & Company—the report shows how, by converting financial statements expressed in historical dollars into dollars of constant purchasing power, the effect of changes in the price level on the reliability of the conventional statements can be determined.

DISCHARGING BUSINESS TAX LIABILITIES. By Horace J. DePodwin. Rutgers University Press, New Brunswick, N.J., 1956. 167 pages. \$4.00. A scholarly investigation of a neglected area in public finance: the payments aspect of business taxes. The author examines the various methods employed by firms in discharging tax liabilities and the impact of tax payments on their working capital position, and suggests a number of implications about the effects of payment methods on capital structure, methods of financing, and the extent of competition among firms.

FINANCIAL POLICIES OF BUSINESS ENTERPRISE. By W. Bayard Taylor with the collaboration of Frank M. Graner. Appleton-Century-Crofts, Inc., New York. 1956. 684 pages. \$6.00. A second edition of a text first published in 1942. Without discounting the usefulness of the "problem approach," the authors demonstrate their conviction that "policies are principles in practice" by stressing principles rather than cases and the rules of "financial hygiene" rather than examples of "financial pathology."

SALES FORECASTING

Uses, Techniques, and Trends

ACCURATE SALES FORECASTING is a key to future marketing success. A practical sales-forecasting program, which identifies and anticipates customer needs and demands, serves as a springboard for the company's budgetary program and for its production and purchasing plans.

In this new AMA Special Report, specialists discuss in detail such aspects of the forecasting function as forecasting for new products, finding and evaluating basic data, using mathematics to test the possibilities and limitations of new forecasting techniques, and reviewing and revising forecasts in the light of new information.

A valuable survey of the sales-forecasting practices of nearly 300 companies is also featured.

CONTENTS

Part One—Methods and Materials

What Management Expects of Forecasting. Objectives and Techniques of Sales Forecasting. Increasing Forecast Accuracy Through Good Organization. Finding and Evaluating Basic Data for Sales Forecasting. The Practical Use of Mathematics in Forecasting. More Effective Presentation of Forecast Information. Sales Forecasting for New Products. The Use of Sales Forecasts by Other Departments. Short-, Medium-, and Long-Range Forecasting. When and How Forecasts Should Be Reviewed and Revised.

Part Two—Company Experiences

Preparation and Coordination of Forecasts at *Corning Glass Works*. Reliable Forecasting in the Smaller Company: *Dodge Manufacturing Corporation*. Variation in Forecasting Techniques at *New Departure*.

Appendix: Survey of Sales Forecasting Practices

SPECIAL REPORT 16

\$3.75 (AMA members: \$2.50)

NOTE: This report has been distributed as an extra service to AMA members enrolled to receive Research Service in the Marketing division. If your type of AMA membership does not entitle you to receive this study without charge, or if you wish extra copies for yourself or your associates, this report may be ordered at member price.

Order from **DEPARTMENT MF, AMERICAN MANAGEMENT ASSOCIATION, INC., 1515 Broadway, Times Square, New York 36, N. Y.**

AMA will pay normal postage and handling charges on all orders accompanied by check or money order. Orders under \$5.00 should be accompanied by remittance. Orders of \$5.00 or more, unless accompanied by remittance, will be billed for postage and handling charges. Add 3% sales tax for orders to be delivered in New York City.

Learn how to reduce costs and increase sales . . .

at AMA's 26th

ANNUAL PACKAGING CONFERENCE and EXPOSITION

April 8-11, 1957 • Amphitheater and Palmer House • Chicago

FOR OVER A QUARTER OF A CENTURY, business and industry have come to this annual event to learn "what's new" in packaging materials and techniques.

You'll discover how attractive, functional packaging can go to work for you—

- Winning your products preferred positions in stores
- Influencing customers' decisions to buy
- Reducing shrinkage and damage in shipment
- Lengthening shelf life

You'll learn how new packaging materials and techniques can—

- Reduce labor costs
- Speed up your production line
- Save on shipping costs

You'll hear the latest scientific methods for—

- Designing and testing packages
- Setting packaging specifications and tolerances
- Establishing quality control

You'll see actual exhibits of the materials and machinery that you'll learn about at the Conference—the most comprehensive display available to the alert executive who wants to build profits through better packaging.

INSURE YOUR ATTENDANCE—REGISTER NOW!

AMERICAN MANAGEMENT ASSOCIATION, INC.
1515 Broadway • Times Square • New York 36, N. Y.

ago

and
ging

u—
res

arn
the

C.
Y.